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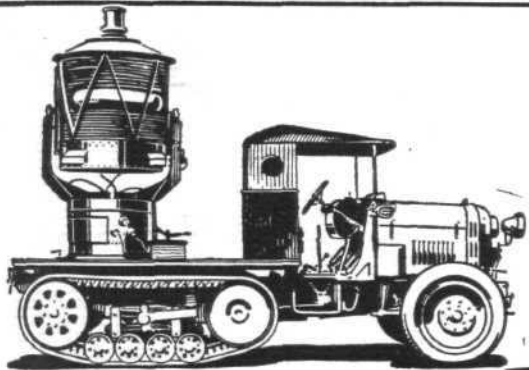
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NOVEMBER 8, 1929.

SIXPENCE WEEKLY.



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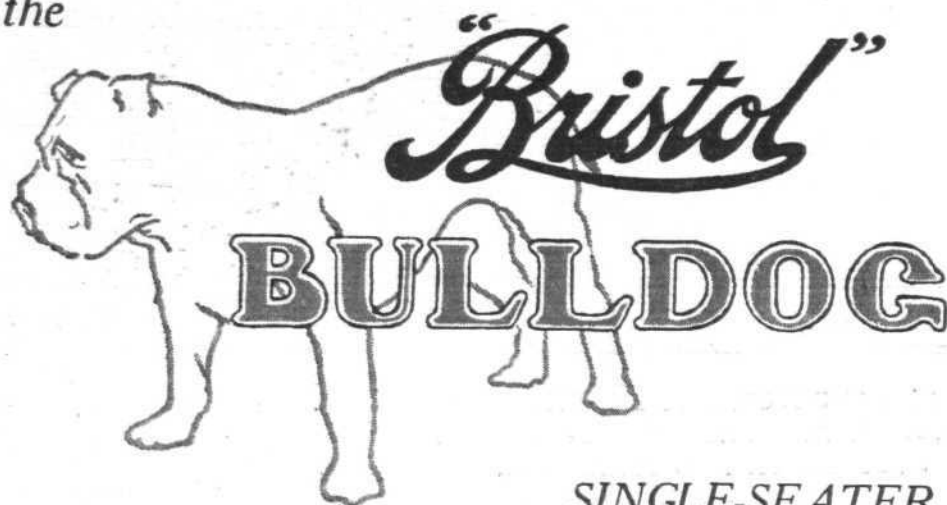
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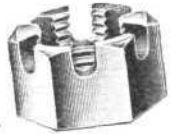
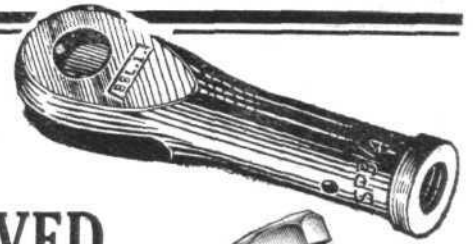
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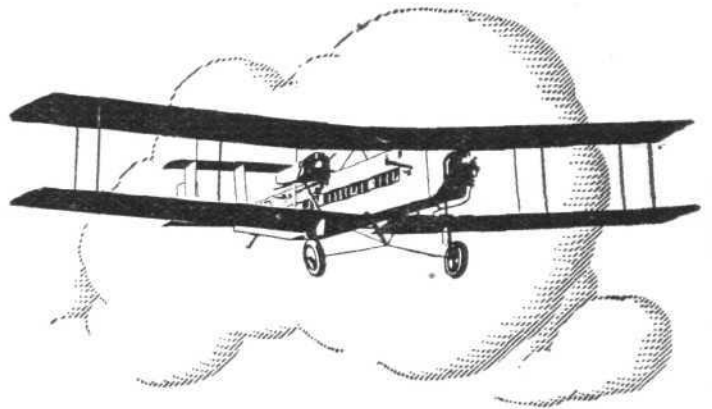
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[“Aeroplane” Photo.]

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OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

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## DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1929.	
Nov. 9	.... H.M.S. "Engadine" Annual Re-Union Dinner, Adelphi Hotel.
Nov. 13	.... Sqdn.-Ldr. Bert Hinkler on "My Solo Flight to Australia" at Westminster School.
Nov. 15	.... R.Ae.S. Informal Dinner and Discussion on High-Speed Aircraft.
Nov. 21	.... "The Inspection of Materials," Lecture by Mr. L. W. Johnson, before R.Ae.S. and Inst.Ae.E.
Nov. 28	.... "Flying and Maintenance from the Owner's Point of View," Lecture by Sq.-Ldr. H. M. Probyn, before R.Ae.S. and Inst. Ae.E.
Dec. 5	.... "Recent Work on the Autogiro," Lecture by Senr. J. de la Cierva, before R.Ae.S. and Inst.Ae.E.
Dec. 12	.... "The Development of Materials for Aircraft Purposes," Lecture by Dr. W. Rosenhain before R.Ae.S. and Inst.Ae.E.
1930—	
Jan. 22	.... "The Strategical Mobility of Air Forces," Lecture, by Gp.-Capt. C. L. Courtney, before Royal United Service Inst.

## EDITORIAL COMMENT



IF we are challenged, we shall defend the Trophy," "To-night we celebrate the British victory, to-morrow we start work." Not, perhaps, in these words, but expressing that sense did Mr. Ramsay MacDonald and General Balbo refer, on board the *Orford*, to the next Schneider Trophy Contest. No one present on that occasion could have put any other interpretation on their remarks after dinner, and during the presentation of the trophy to Waghorn. The official announcement, issued last week and published in this issue of *FLIGHT*, does not appear to be quite in agreement with the sentiments then expressed.

To appreciate the position as it has developed, it is necessary to recall that, from being a sporting event calculated and intended to encourage private enterprise in the production of fast seaplanes, the contest has turned into one between the government resources of competing nations. Up to 1923 the Schneider contest had been flown by machines built by private enterprise. In that year the United States challenged with machines built at State expense, and manned and looked after by naval personnel. Since that year the Schneider has been an affair of State backing. That this has been unfortunate in some ways may be admitted. That it is quite outside what the late Jacques Schneider contemplated is certain. But such has become the position, and it has to be faced.

Before deciding on a change in policy one should take stock of the situation and consider all its aspects. The first question will naturally be "What have we got out of the Schneider Contest under Government backing"? The answer to that is that, in addition to two types of exceedingly fast seaplanes, the Supermarine Rolls-Royce S.6, which won the Schneider Contest and later established a world's speed record, and the Gloster-Napier 6, which was prevented by faulty carburation, as was also the Napier engine itself, from showing what it can really do, but which will undoubtedly prove a very fine machine when the carburation troubles have been

overcome, we have got the very powerful Rolls-Royce "R" type engine and we have got the last ounce of power out of the Napier. But we have also accumulated a considerable amount of technical data relating to streamlining, to float design, to supercharging and to a number of other problems, which data will require a deal of digesting before being applicable to service types. That application will take some time, and to that extent the Government may appear justified in its decision to withdraw support for a time.

That the Government, through the Air Ministry, should have chosen this particular moment seems not a little unfortunate and inopportune. Surely it would have been better policy to have given the Government support for one more contest. In that case Great Britain might have won the Schneider again in 1931, and would thus have become the permanent holder of the Trophy. There would then have been an excellent opportunity to substitute a contest of a very different nature, in which certain limits were set on the expense entailed in producing machines. From the aircraft point of view, probably just as much could be learned from machines limited to engines of much smaller power. The de Havilland "Tiger Moth" was an example of what can be done with relatively low horse-power. The "Gipsy" engine in that machine developed 130 h.p. We do not suggest that the power would necessarily be limited to that, nor even that a direct limit on cubic capacity be used as a basis. Probably an effective limitation could be established by, for example, stipulating that the propellers used (in single-engined seaplanes) must not exceed a certain value of the product of blade area and diameter, or some such restriction. Designers would then have a fairly free hand, and as a propeller with limited area and diameter could not be "faked" to absorb efficiently more than a limited power, a reasonable restriction might thus be placed, indirectly, on the cost of machines.

As circumstances are now, we are simply, by the Government's decision, making a present of the Schneider Trophy to any nation which succeeds, by 1931, in producing machines that will beat the S.6 and the Gloster 6. As the present holders of the Trophy we have a moral obligation to defend it, and without Government assistance that can only be done by the existing machines.

With the official statement that "Convincing proof has now been furnished of what the British aircraft industry can do, and the wide public interest displayed should make it possible for our pilots and machines to compete in what is intended to be a sporting international event on a basis of private enterprise" we thoroughly disagree. Under present conditions no private firm could afford the expense, and no civilian pilot could afford to be away from his regular work for a sufficient time to enable him to get into adequate training.

To us it seems that the present attitude of the Government is unsound. Either we should, with the consent of other nations likely to challenge, attempt to secure an agreement to leave a longer period between the contests, as for example, five years, or we should do our utmost to win the contest again in 1931, after which the Schneider would automatically cease to be. The former course is obviously the one to follow if it is held, as there is good reason for doing, that the Schneider under present condi-

tions is worth its cost. The latter course has much to recommend it, because it would afford us an opportunity to make a graceful and dignified exit. It is even conceivable that it would be wise to have two events: The Schneider under present conditions, but held at longer intervals, and an annual event, quite distinct from the Schneider, the rules for which were designed to limit expense in building challengers, somewhat on the lines we have outlined.

Is it too late to reconsider the whole position?

❖ ❖ ❖

As "the seaplane paper" FLIGHT cannot refrain from referring Editorially to the extraordinary series of mishaps which have resulted in a portion of the London-India air route having had to be changed, temporarily, to an overland, instead of an oversea service. We refer, of course, to the use of land-planes between London and Athens, via Salonika, instead of Athens via Genoa.

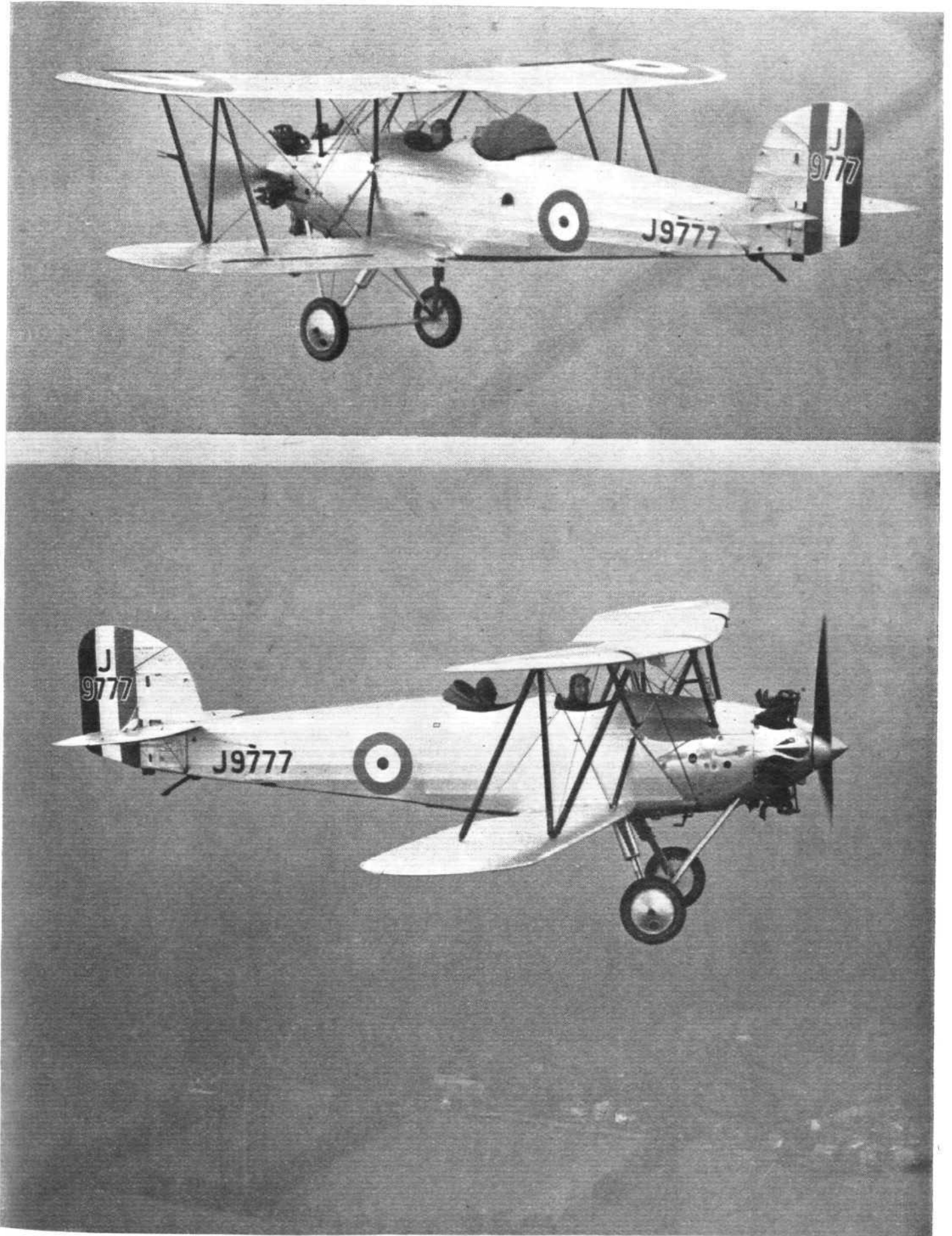
There is an old saw which has it that "It never rains but it pours," and it certainly seems to have been true in this instance. First, there was the very distressing accident which resulted in the loss of the Short "Calcutta" flying-boat, *City of Rome*, with all on board. With that accident we dealt last week, when we pointed out that whatever the initial cause of the machine being forced down, the "Calcutta" did remarkably well in remaining afloat as long as she did under the conditions that existed. Within a few days of this accident, two more mishaps took place, which put the two remaining "Calcuttas" out of commission.

Having the development of flying-boats very much at heart, and believing firmly in the vast possibilities of the type for Empire use, we desire to do our best to prevent any erroneous impression from gaining currency. Without knowing all the facts, it would be natural for the man in the street to jump to conclusions. He would very likely say to himself, "Three flying-boats 'gone west' within a week or so. The flying-boat cannot be any use." It would be a thousand pities, and very unfair, if that impression were to spread. Fortunately, the facts are such that this need not be the case.

Of the first accident there is little to add beyond what we said last week. The machine lived for many hours in a very rough sea and a gale of wind, and no flying-boat of any size or type yet built could have lasted indefinitely under those conditions. The "Calcutta" actually did far better than one could reasonably have expected.

The last two mishaps, fortunately without serious consequences, as far as passengers and crews were concerned, prove nothing whatever against flying-boats: The first machine struck a buoy and broke one of the chine struts. She could not proceed, but the repairs are being made and the machine will be in commission again very soon. In the second mishap, the hull struck portions of a submerged jetty, and the whole bottom was ripped open. Fortunately, the pilot had the presence of mind to keep his engines running full power and beach the machine at once, which he did successfully. It will be seen that in neither case did the mishap reflect adversely on either the aircraft or the engines. In point of fact, Imperial Airways have placed orders for two more "Calcuttas," one of which is nearing completion, so that the service should be working normally before very long.

## FLYING BY INSTRUMENTS



**THE HAWKER "TOMTIT":** A training machine of recent production, incorporating several unusual features. For instance, it is fitted with a special type of Reid turn indicator, and other instruments which permit the pupil to be trained in flying solely by instruments. For this purpose the hood over the back cockpit is closed, cutting out the view entirely. These two illustrations show the machine with hood closed and with hood open. The engine is a "Mongoose." (FLIGHT Photos.)

## THE AD.1. NON-RIGID AIRSHIP



"Truth in Advertising," or advertise with "FAAX". (FLIGHT Photos)

**W**E are now able to give full particulars of that very interesting little airship, the AD.1, which was recently seen at Cramlington Aerodrome during the Newcastle Air Pageant.

The AD.1, which is built by the Airship Development Co., of 39, Victoria St., London, S.W.1, at their Cramlington Airship Station in Cumberland, is the first privately-owned ship to be built here since the war and is, in fact, one of the few airships that have ever been built privately in this country.

The uses to which such a ship can be put are, of course, very many and such work as Forestry inspection, Fishery control, police patrols, aerial photography, aerial survey, training of airship pilots and crews, aerial advertising and joy-riding are all within its scope and in some respects it is definitely more suited to the work than are heavier-than-air craft. It can safely fly at low altitudes and can cruise at a very slow speed, in fact, if necessary it can almost hover, which, for survey work where the flora or geological strata have to be examined closely, is obviously a great advantage as compared with an aeroplane. Aeroplanes have been used for advertising purposes but their high speed and the danger which attends their flight over populous areas inhibits their use to any great extent; with such a ship as the AD.1, however, these drawbacks are removed and she can fly with complete safety at a low altitude and low speed anywhere and, moreover, the space available for display on the hull, which, in this case, is a panel on each side, 76 ft. long and 24 ft. deep, is far and away larger than anything that can be used on ordinary aeroplanes. For joy-riding she should offer

considerable attraction. With a saloon car and a pusher engine the passengers would enjoy comfort and freedom from noise, which should give them a different aspect of flying to that obtainable in an aeroplane.

The A.D.1 is, in the main essentials, the same as the wartime "*Blimp*," which was so successful in coastal and anti-submarine patrols, but in place of the water-cooled engine which was then used, she now has an air-cooled 75-82 h.p. A.B.C. Hornet, and also all parts, such as suspension cables, have been greatly strengthened.

The envelope is built up from panels of extra strong, two-ply rubberised, aluminium doped fabric and the seams are double stitched, lapped, cemented and taped to ensure absolutely gas-tight joints. The fabric is of a special kind with particularly low permeability and great strength, and the rubber proofing between the plies minimises the gas diffusion; while the aluminium doping guards against superheating, with its consequent rise of pressure, and also prevents the sun's rays perishing the rubber proofing or even the fabric itself.

The outer face of the two-ply fabric is laid on the bias and the envelope is made up with alternate rings of left and right-hand biased fabric; this not only localises any "wound" in the envelope, but also prevents twisting of the hull under stress.

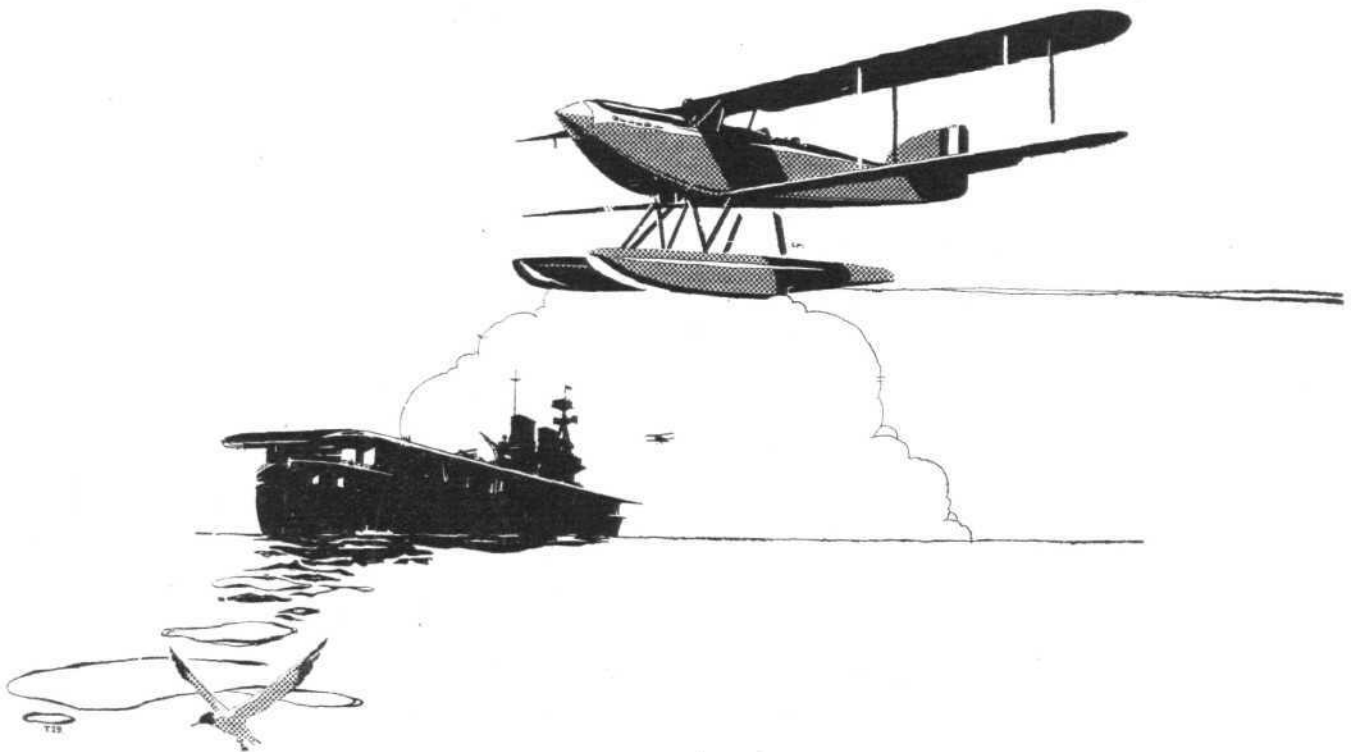
The shape of the hull in a ship of this type is maintained by the pressure of the gas inside the envelope, which in the AD.1 is about equal to a 25-m/m. head of water, and to prevent the nose "cupping in" and losing its streamline shape it is ribbed with shaped wooden members, which are wrapped with glued tape and laced on to the envelope; these ribs are also carried back



Mr. R. H. Schlötel, the A.D. Co.'s Maintenance Engineer, gives comparative size to a view of the tail units. (FLIGHT Photo.)

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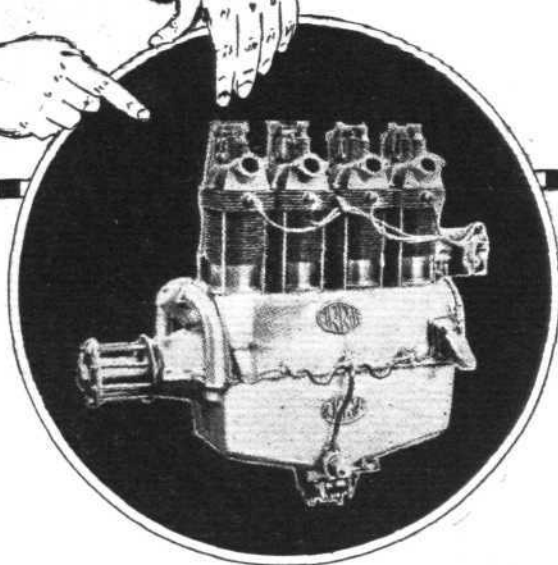
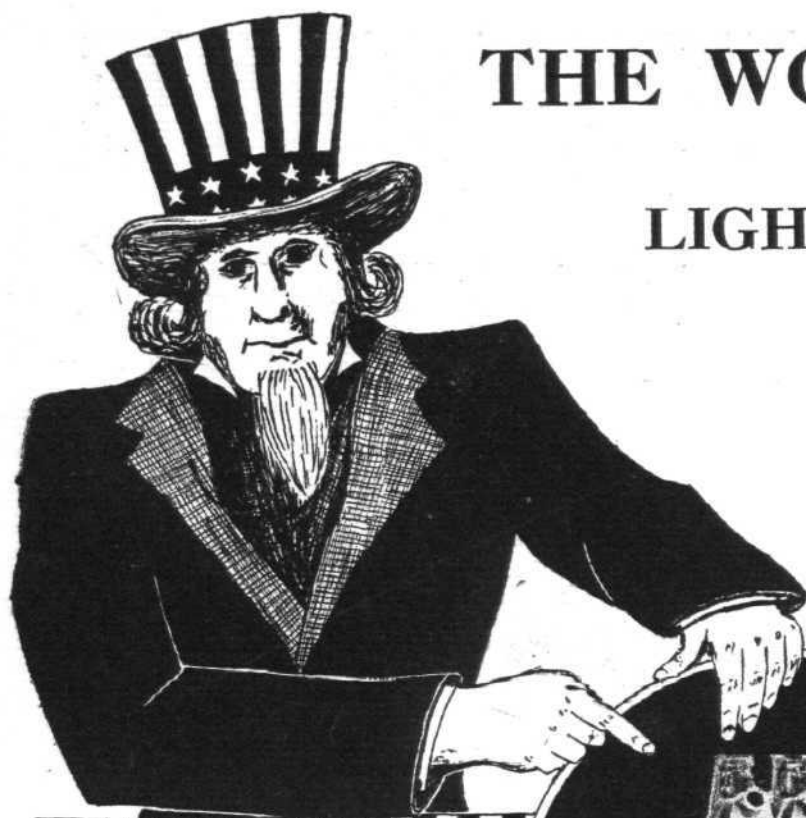
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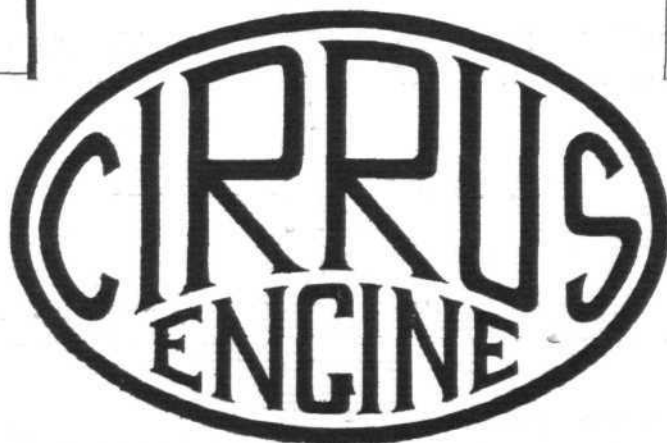
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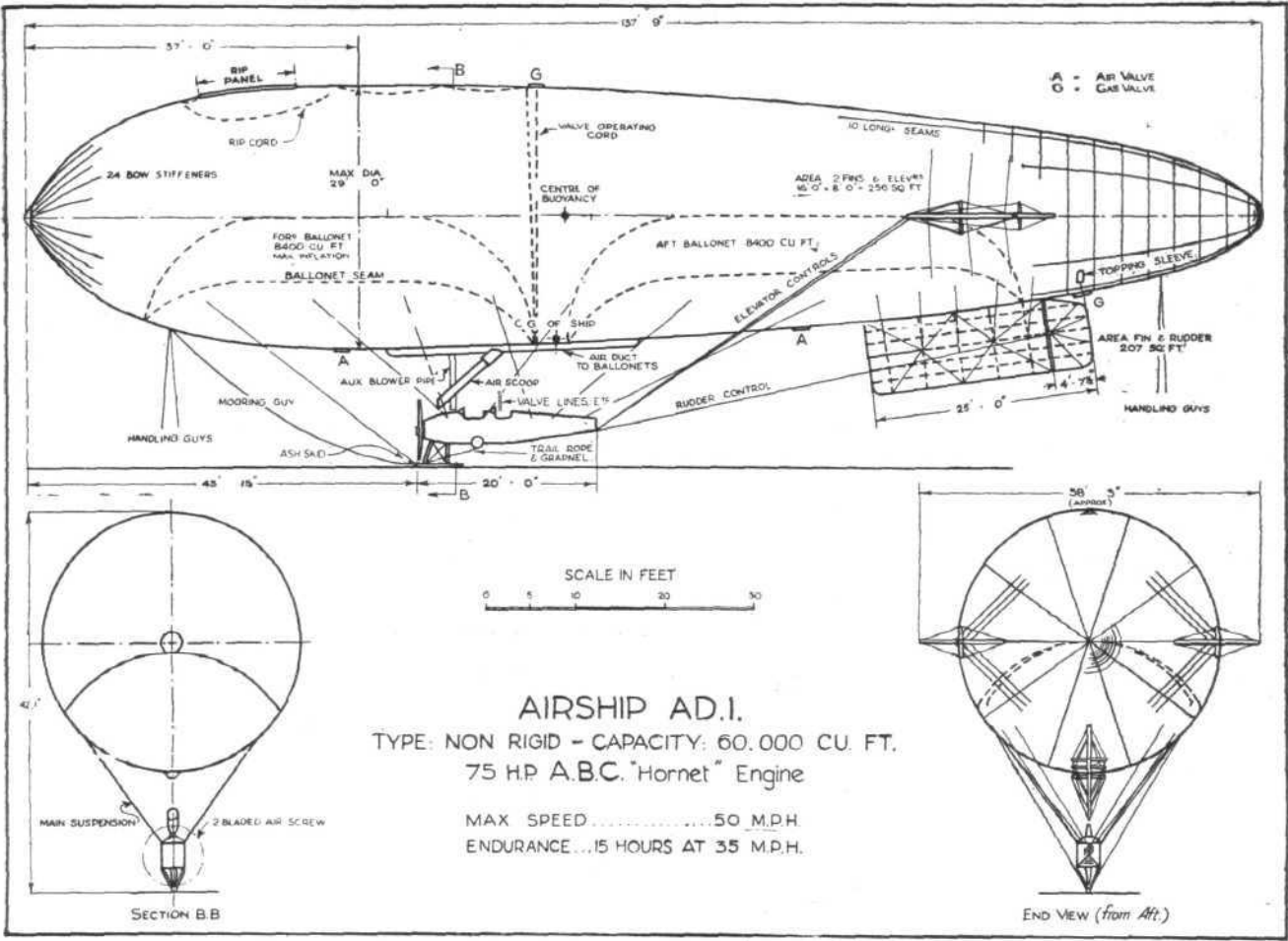


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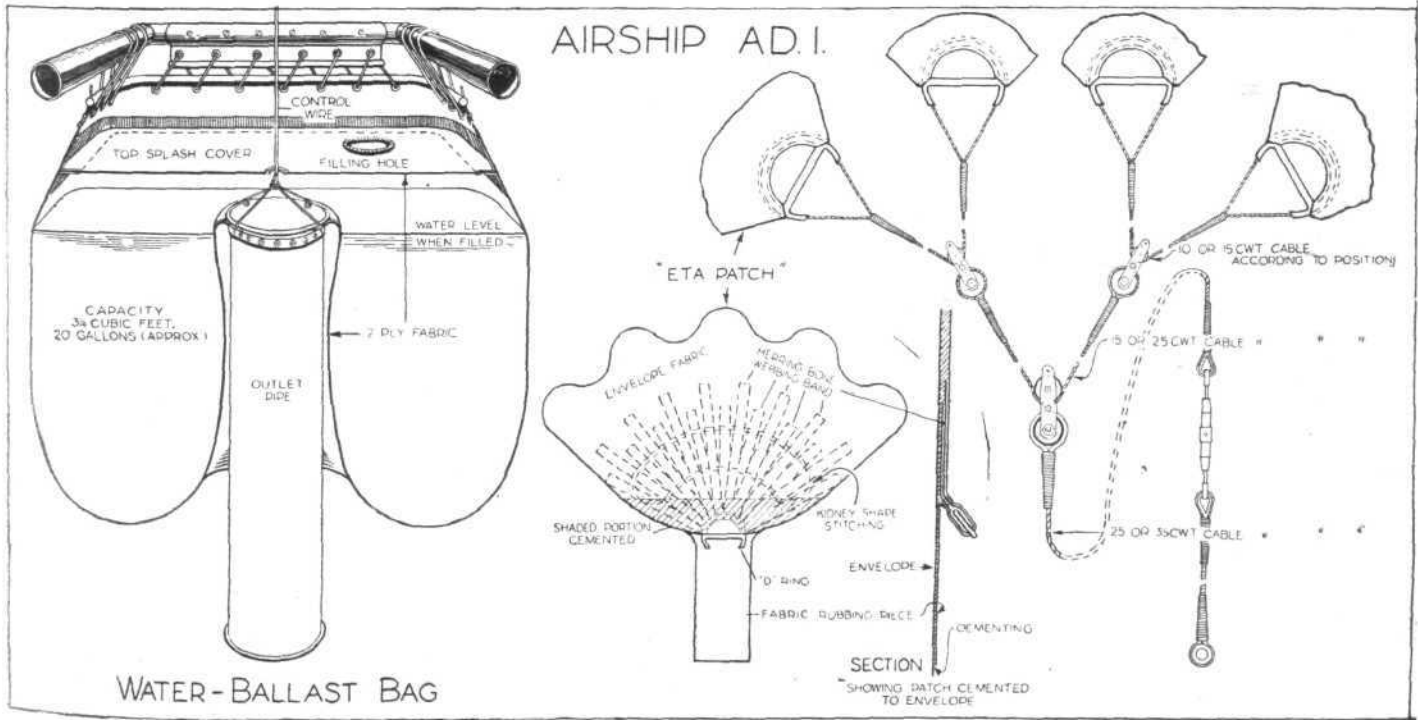
beyond the point where the dynamic pressure on the head becomes zero and terminate at the front in metal nose-cap.

To maintain the pressure in the hull and trim the ship the usual type of ballonet system is located inside the envelope. These are fed with air blown along an air-duct on the underside of the envelope by means of an air-scoop, which is lowered, when necessary, into the slip-stream of the air screw. Should it be necessary to use the ballonet system when the main engine is out of action, this may be done by means of an auxiliary 1-h.p. blower, which is in the coxswain's cockpit and to which a small chute, which leads into the main air-duct, can be brought.

This auxiliary blower, which ensures that the shape of the

envelope may be maintained under emergency, and also the design of the ballonets themselves, form distinctive features of the AD.1. With these ballonets there is no tendency for them to tear away from the envelope at the seam, as in the old ships, because they have now been designed so that when empty they lie quite flat on the bottom of the envelope and conform to its shape; their total capacity is roughly 28 per cent. of the volume of the hull. A drawing shows the whole blower system and accentuates its simplicity.

A normal pattern rip panel is fitted on the top of the forward end of the envelope and can be operated by a cord from the pilot's cockpit for rapidly deflating the envelope in case of necessity.

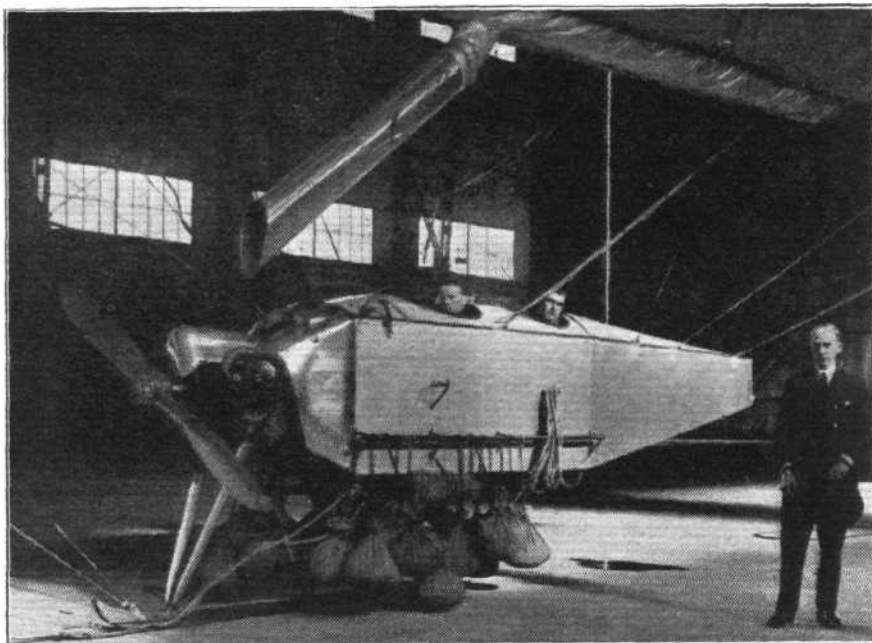


Water-ballast arrangement and main suspension attachment to envelope

The control system is very simple and consists of a vertical fin carrying a rudder and two horizontal surfaces, each carrying an elevator. These are all of normal aeroplane construction with wooden spars and ribs, wire internal bracing and doped linen covering. They are braced externally with King-posts and wires and are secured to the envelope by eye-bolts fixed to skid cross-members, which are made from triangular section spruce and are laced to patches attached to the envelope. The fins are also wire-braced direct to the envelope; these bracing wires are attached to the hull in the same way that all the main suspension wires are, which is by means of an "Eta" patch. This patch, which is illustrated in our detail drawings, is made from two-ply envelope fabric with herring-bone taping securing a dee ring to it, and the whole is cemented to the hull with a special solution; this forms an exceptionally strong attachment and has stood tension tests of up to 23 cwt.

The control car is built on the same lines and is of the same construction as an aeroplane fuselage, with spruce longerons and plywood covering, this ply is further covered with glued fabric and painted aluminium colour. The car is suspended from the envelope by means of extra flexible steel cables, which are attached to the Eta patches, as shown in our detail drawings.

The engine is mounted on a very rigid flanged steel plate and braced to the car with steel tubes. On the front bulkhead of the car and immediately behind the mounting is a fireproof bulkhead of the normal aluminium and asbestos type. The engine is the four-cylinder horizontally-opposed 75-82-h.p. A.B.C. Hornet, which, being air-cooled, has proved eminently suitable for this work and the saving in weight over the water-cooled type results in an increase of pay-load. The exhaust pipes are led down underneath the car and the result is to make the machine very quiet when compared to an aeroplane.



The "car" with Mr. J. R. Pike (designer) on the right, Capt. J. A. Beckford-Ball, A.F.C., in the pilot's cockpit, and Mr. J. W. Long, A.F.M., in the coxswain's cockpit. (FLIGHT Photo)

Behind the engine is the coxswain's cockpit, abaft that the pilot's cockpit, and in the tail of the car is the water-ballast bag.

The fuel system comprises a main tank which is between the pilot's cockpit and the water ballast bag and has a capacity of 35 gallons, and a service tank in the front of the car holding 3 gallons. This service tank holds sufficient fuel for one hour at cruising speed and is fed from the main tank by a hand pump worked by the coxswain; the main shut-off cocks are operated by the pilot. The oil supply, is carried in a 4-gallon tank directly behind the engine, and is cooled by a "Vickers oil cooler."

The flying controls are simply arranged and operated by handwheels, that for the rudder is athwartships in the front of the coxswain's cockpit, while that for the elevators is fore and aft and nearly on the centre line of the pilot's cockpit. Another wheel is fitted on the starboard side of the coxswain by means of which he can also operate the elevators should it be necessary. All the cross shafts are on ball bearings and grease gun nipples are provided for lubrication. The engine controls are in the pilot's cockpit on the port side. The pilot is provided with a full range of flying and engine instruments and some of the essential flying instruments are duplicated in the coxswain's cockpit. The valve system of the ship is very simple, and is arranged to allow a rise of 1,000 ft./min. (305 m./min.).

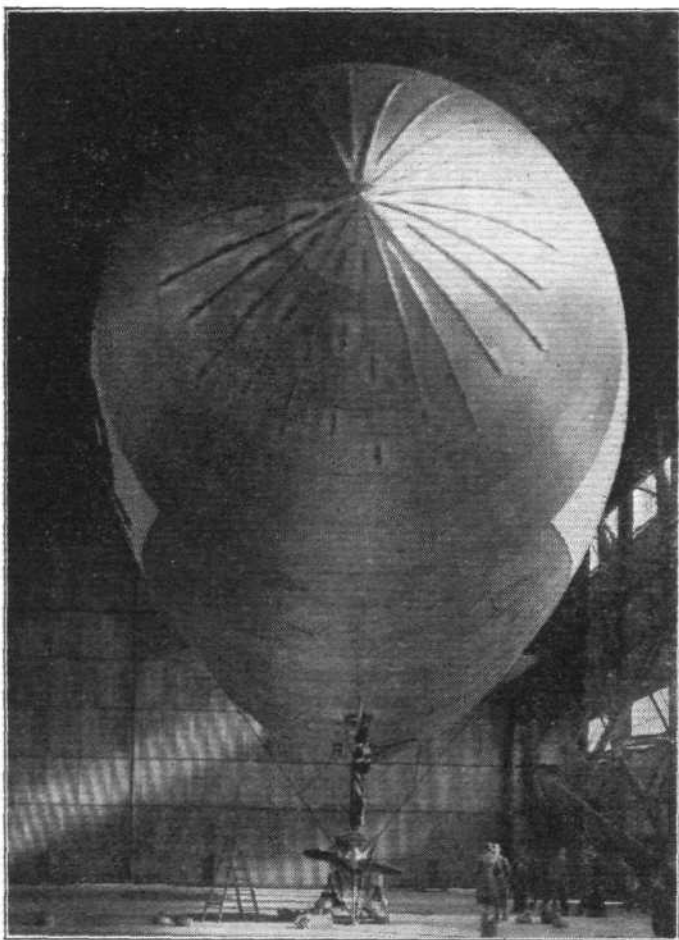
Two gas valves are provided, one positively-operated, one in the top forward end of the hull and one which will also lift at a pressure equal to 40 m./min. head of water in bottom at the rear end. An air valve is provided at the bottom under each ballonnet, these blow at a 30 m./min. pressure and can also be operated by the pilot.

The water-ballast bag is carried in a compartment in the car abaft the main fuel tank. Its capacity is such that the weight of the water is about 3 per cent. of the gross lift. Its action is illustrated by a detail drawing and the pipe which, when lowered through the water container, allows the water to escape is operated from the pilot's cockpit.

For landing purposes an ash, metal shod, skid is mounted on steel tubes from the underside of the car and besides safeguarding the airscrew it also serves as a platform from which it would be possible to make adjustments to engine during flight.

Handrails along each side of the car are provided for manhandling the ship, and also carry the sand ballast bags, grapnel, and ropes. As protection against atmospheric electrical discharge, all the metal work is bonded internally and externally with copper wire.

The ship, of course, has been designed to Air Ministry requirements in order that she may have a full C. of A., and the conditions of design and factors laid down in R. & M. 1170 have been followed throughout. The reserve lift has been found to exceed that expected and a seat for an additional passenger is therefore being arranged behind the pilot



An unorthodox view. (FLIGHT Photo)

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- Air** — 1918 A Napier-engined D.H. aeroplane climbed to a height of 30,500 feet in 66 minutes. At this time no human being had ever soared so high.
- 1921 A Napier-engined Gloster aeroplane won the Aerial Derby. Speed 163.4 m.p.h.
- 1922 A Napier-engined Supermarine flying-boat regained the Schneider Trophy for Great Britain at a speed of 149 m.p.h.
- 1922 A Napier-engined Gloster aeroplane won the Aerial Derby. Speed 180 m.p.h.
- 1923 A Napier-engined Gloster aeroplane won the Aerial Derby. Speed 192.4 m.p.h.
- 1926 The first non-stop crossing of South Atlantic Ocean carried out by Commandante Franco flying a Dornier flying-boat with two Napier engines.
- 1927 Schneider Trophy won by a Napier-engined Supermarine-Napier seaplane flown by Flight-Lieut. S. N. Webster, A.F.C. Speed 281.669 m.p.h.
- 1928 Capt. H. S. Broad, flying D.H. Hound, fitted with Napier engine, secured three World's speed records whilst carrying loads of 500 and 1,000 kilograms.
- 1928 The greatest formation flight ever carried out was made with four Supermarine-Napier Southampton flying-boats, each fitted with two Napier engines. The machines flew from England to Australia, round Australia and back to Singapore, covering 180,800 engine miles without mechanical trouble.
- 1929 The first non-stop flight from England to India was carried out with a Fairey monoplane fitted with Napier engine. 4,130 miles in 50 hrs. 38 mins.

- Land**—1929 The highest speed ever attained on land was made by Major Sir Henry Segrave when he drove his Irving-Napier car over one mile at the amazing speed of 231.36 m.p.h.
- Capt. Malcolm Campbell set up world's land speed records at Verneuk Pan with his Napier Arrol-Aster as follows:—over 5 miles, speed 211 m.p.h.; over 5 kilometres, speed 216.53 m.p.h. They both used Napier engines.

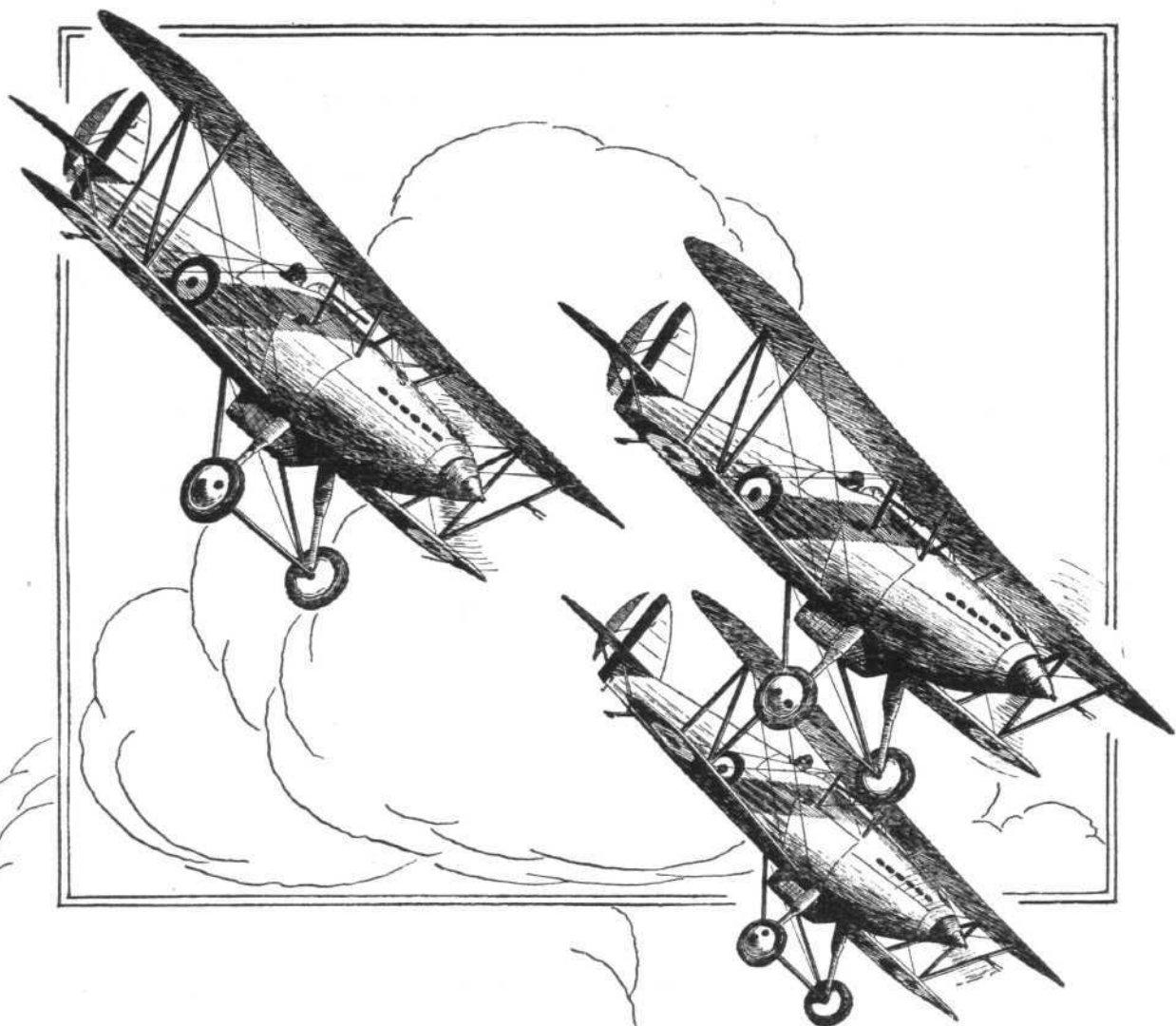
- Water**—1929 The world's motor-boat speed championship was won at Miami by Major Sir Henry Segrave, driving Sir Charles Wakefield's Napier-engined "Miss England."
- Sir Henry Segrave at the Lido with the same boat made six runs over the measured mile, averaging a speed of 92.8 m.p.h.
- At this meeting, competing against the best from Italy and America, Sir Henry Segrave won all trophies, including the Duke of Piedmont's cup and Count Volpi's cup.

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in the AD.1 and in the AD.2 which is now nearing completion ; proper additional passenger or freight space is being allowed for.

Besides building these two ships, the Airship Development Co. are able to take on contract work and are in a position to design and manufacture to customers' specifications, airships, kite balloons, and airship fabric work of all descriptions.

#### Estimated Performance and Dimensions

Overall length .. ..	137 ft. 9 in. (42 m.)
Maximum diameter .. ..	29 ft. (8.85 m.)
Envelope capacity .. ..	60,000 cu.ft. (1,700 cu/m.)
Balloonet capacity .. ..	16,800 cu.ft. (475 cu/m.)
Gross lift .. ..	4,250 lb. (1,930 kg.)
Deadweight .. ..	2,750 lb. (1,250 kg.)
Disposable load .. ..	1,500 lb. (680 kg.)
Pay load with range 500 ml. (800 km.) at 1,000 ft. (300 m.) .. ..	550 lb. (250 kg.)
Ceiling with crew of two and fuel for 500 ml. (800 km.) .. ..	5,000 ft. (1,500 m.)
Maximum speed .. ..	50 m.p.h. (80 km./h.)
Cruising speed .. ..	35 m.p.h. (56 km./h.)

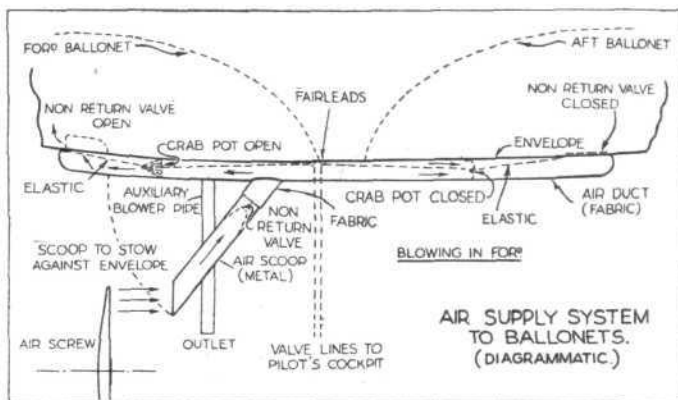
#### Further Flights in the R.101

R.101 was out again in the air on Friday, November 1. She was walked out of the hangar at dawn, and lay at 200 ft. above the mast until the conditions became suitable for actual coupling up at 7.45 a.m. At 9.40 a.m. she cast off with Sir Samuel Hoare on board as the chief passenger. She took an easterly course, and at 11.33 a.m. was circling over Sandringham, where their Majesties were in residence, observers were able to distinguish both the King and Queen among the spectators who were watching the ship from the paths near the house. After leaving Sandringham, a course was taken over King's Lynn, Cromer, Overstrand, Norwich, Newmarket and Cambridge; she then made for Bedford, and arrived back at 3 p.m. and was locked home to the mast about an hour later. No attempt at a full-speed trial was made, but a speed of 70 m.p.h. was said to have been reached.

On Saturday night, an all-night trip over the Isle of Wight was started; she cast off at 8.12 p.m., and returned at 9 a.m. on Sunday morning. Certain small defects developed in the aluminium water pipes, but these were easily repaired with rubber hose. Full-speed trials were carried out over a triangular course from the Needles to Durlston Head, by Swanage, but the results have not so far been made available. On her return, slight damage was done to the nose in mooring up, owing to the wind veering suddenly, but this was very slight, and was repaired the next day.

#### The Graf Zeppelin

THE Graf Zeppelin made a flight over Switzerland on Saturday, November 2. She landed passengers at Zurich and after taking others on board, returned to Friedrichshafen.



The Blower System

Endurance with normal tankage .. ..	15 hrs.
Maximum range with extra fuel .. ..	1,000 m. (1,600 km.)

The above figures are estimated and the preliminary trials have been so successful that it is anticipated that these figures will be greatly improved upon in practice.

#### Balloon Flight across the Atlantic

A GIRL in Ontario, Canada, has found a Macinlop balloon which was released at Manchester in June. The balloon must have averaged about 1½ miles an hour on its 3,000-mile flight over the ocean. Another balloon, released at the same time, was found in Berlin, after travelling 650 miles, and a third landed at Maidstone, Kent.

#### Memorial to the late Mr. G. Holt Thomas

ON behalf of a number of friends of the late Mr. G. Holt Thomas, and at the suggestion of Air Vice-Marshal Sir Sefton Brancker, the Air League of the British Empire has decided to raise a fund for a memorial tablet commemorating the good work Mr. Holt Thomas accomplished for British Aviation. It is proposed to erect the tablet at the Air Port of London, Croydon, or some other suitable place. Subscriptions for this worthy object may be forwarded to the Secretary-General, Air League, Astor House, Aldwych, London, W.C.2. Any surplus from the subscriptions received will be handed over to the R.A.F. Memorial Fund, or put to use in some other way.

#### Buenos Aires Exhibition

IT is stated that official notice has now been given to the management of the great British Empire Trade Exhibition to be held in Buenos Aires in 1931 that His Majesty's Government have recognised the importance of the occasion and decided to participate on a suitable scale. For this purpose the Government exhibits will be housed in one of the finest buildings in the extensive exhibition grounds, which have been so generously lent by the Argentine Rural Society. We hope that British aircraft and engines will be well represented in this section.

MR. ROY TUCKETT, who is shown on the right, together with a view of the special tank arrangements, is a member of the Port Elizabeth Light Aeroplane Club, and hopes to start out within the next few days on a trip to Capetown. He only learnt to fly within the last eighteen months, but has made careful arrangements for the journey, which he hopes to accomplish in ten days. His route will be Croydon, Lyons, Pisa, Rome, Brindisi, Athens, Solum, Cairo, Wadi Halfa, Khartoum, Mongalla, Malakal, Kisumi, Tabora, Abercorn, Broken Hill, Bulawayo, Pretoria, and Bloemfontein. The total distance is 8,500 miles and his Gipsy-Moth, which he recently took delivery of from Phillips and Powis at Reading, has been fitted with extra tanks giving him a fuel capacity of 60 gallons. The previous record, which Mr. Tuckett hopes to break, is 13½ days, made by Capt. P. Murdoch.





# AIR TRANSPORT

## AIRPORTS

By FRANCIS WOOD, M.Inst.C.E.  
(Borough Engineer and Surveyor to the County  
Borough of Blackpool)

(Continued from page 1164)

### Runways

HAVING selected the area for the airport, runways for the prevailing winds should be marked out on a plan. It will be noticed that in Figs. 1 and 2, the shaded portion indicates the runways, 200 yards wide, for the prevailing winds during the year. On calm days, the runway to be used would be defined in the regulations, and will be one of those provided for. Fig. 1 has inserted the average number of days that each runway will be used in the year; Fig. 2 has inserted three arrows showing the direction of the wind on the greatest number of days, and as aeroplanes land and take off into

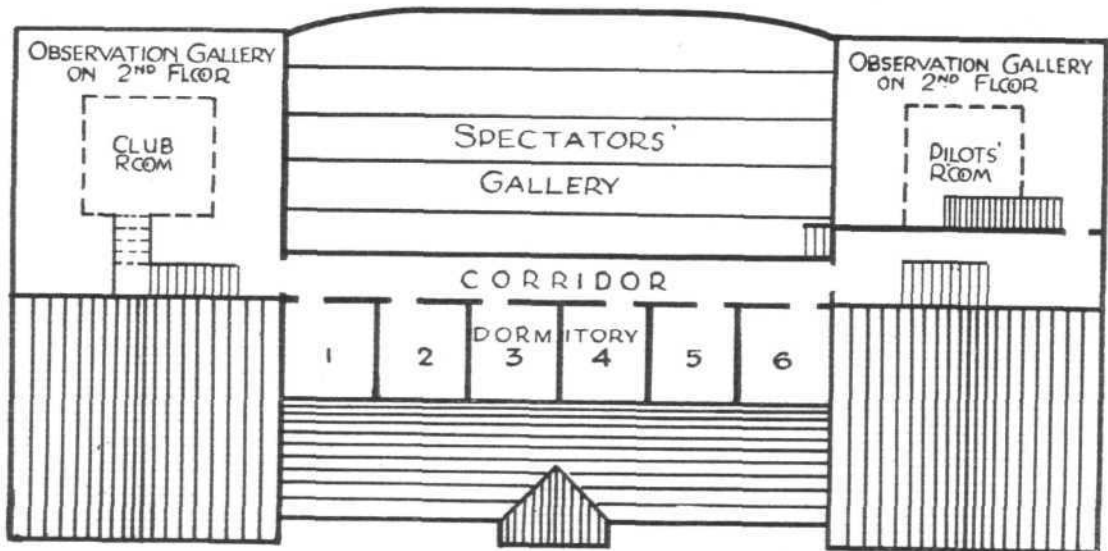
the wind, it is obvious that obstructions of any kind should not be placed near to the areas, which are lettered A to G.

### Selecting Position of Hangars

The only area which is out of the line of flight is marked O and +; these are the positions where the hangars and offices might be placed, and it depends on which is nearer to the town and access roads that the choice would be made for these buildings. The layout of this portion is of some importance. There should obviously be a road access, and it would terminate in a large square or circular space, where would be placed the future administration block, and either on one side or both sides, the hangars and stores would be built.

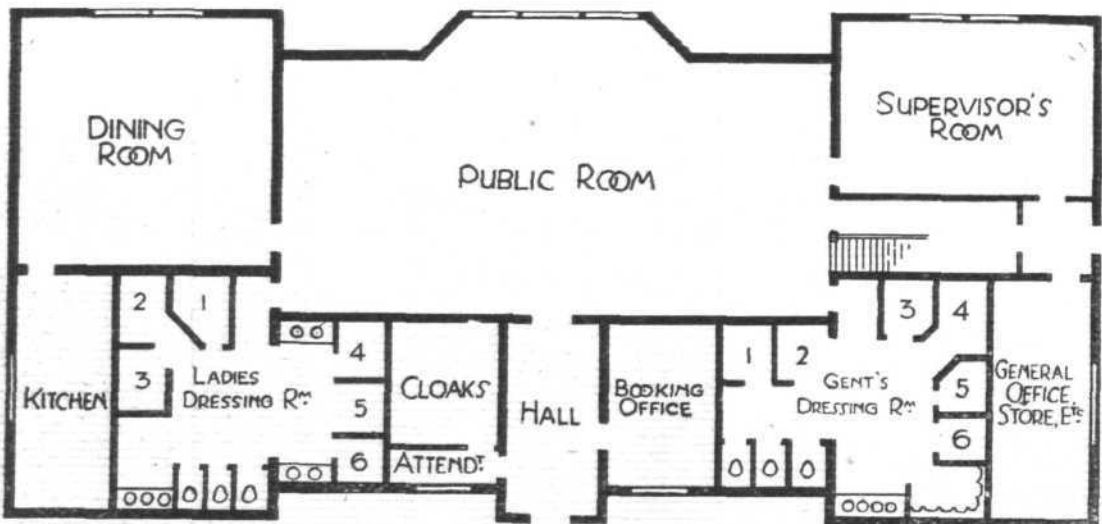
### Administration Block

Figs. 5, 6 and 7 show a diagrammatic scheme of accommodation required in the administrative block. The main entrance hall is at the rear centrally in the building. On one side of the hall is the enquiry and ticket office and on the other side is a public telephone, cloakroom and attendant's room. The public room is entered from the hall, from which there should be a comprehensive view of the airport.



— FIRST FLOOR PLAN —

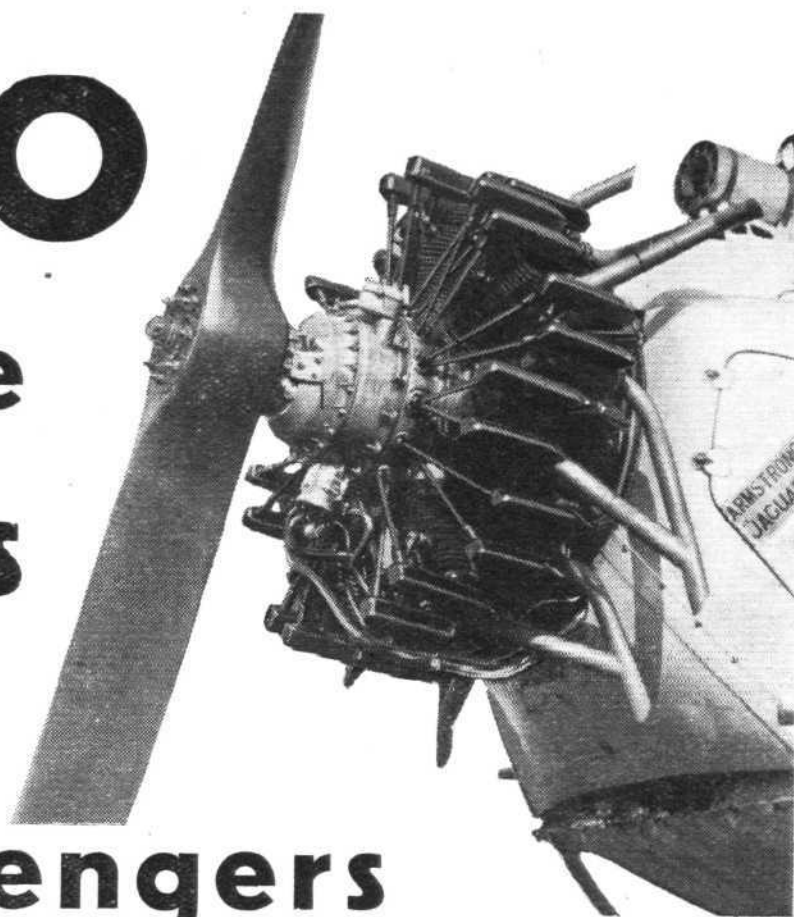
FIG. 5



— GROUND FLOOR PLAN —

FIG. 6

# 4,000 full throttle Take-Offs with 10 Passengers



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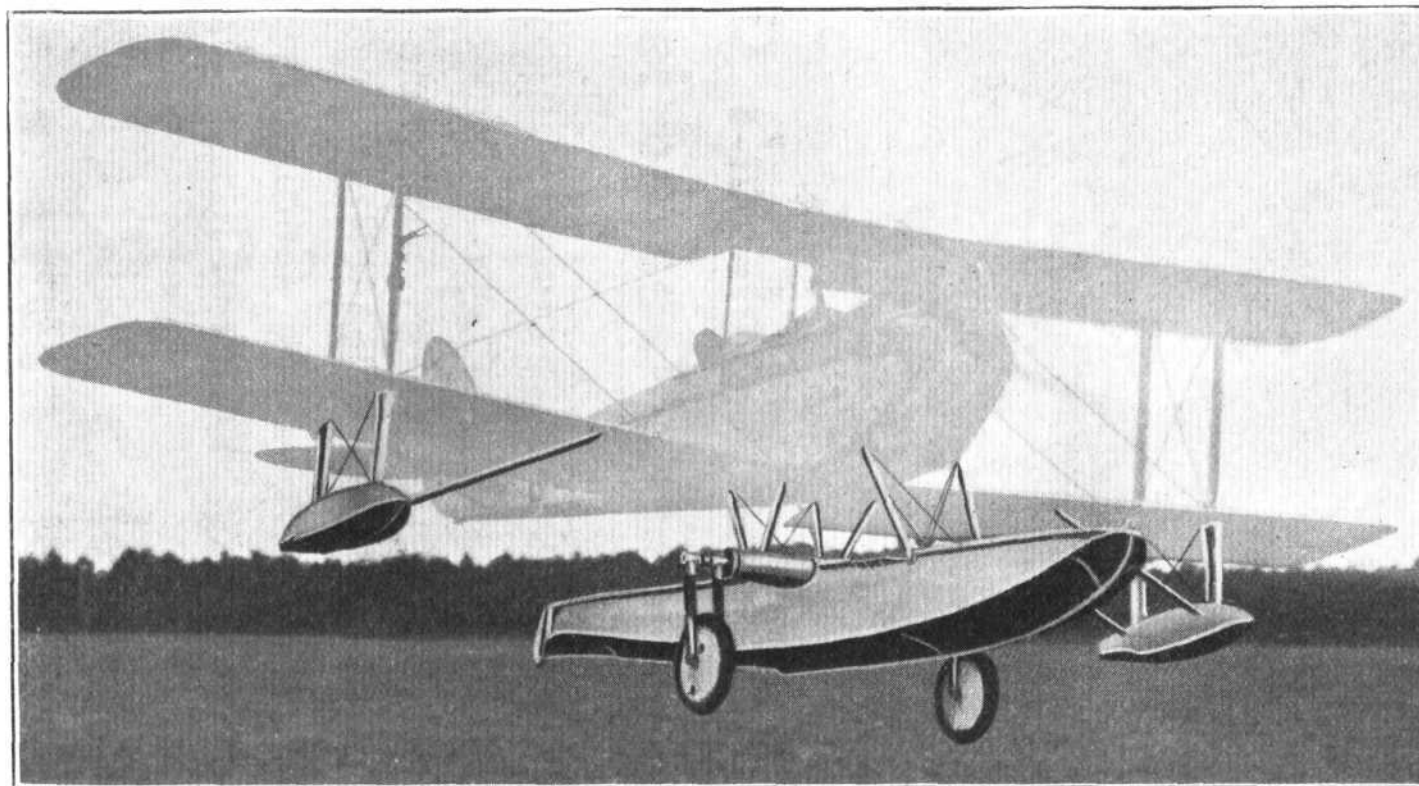
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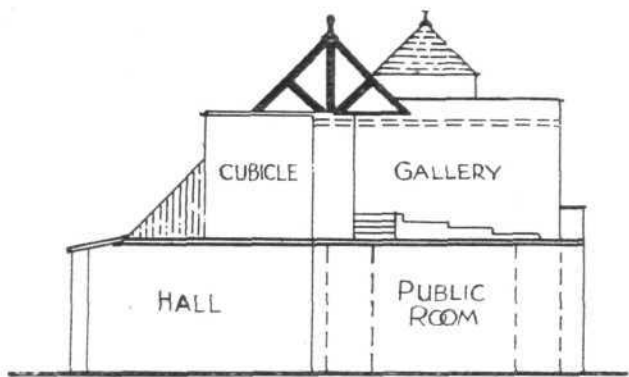
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— SECTION — FIG. 7

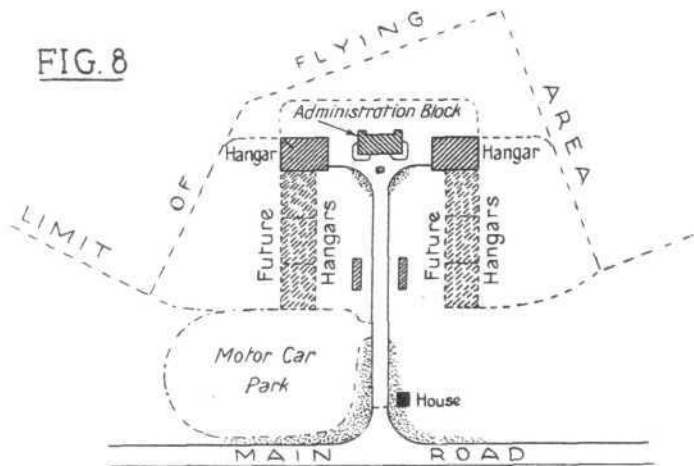
On the left of the public room is a lounge, or if a hotel is not in the vicinity, or becomes part of the scheme, this room may be regarded as a dining room, with kitchen adjoining, in order that light refreshments might be available; these can be extended to any size, to suit the requirements. The dressing rooms, for both ladies and gentlemen, are shown, with all necessary conveniences.

A flight of stairs gives access to the upper storey; here the central portion could be used as a stand for spectators, and the upper storeys of the two end blocks be developed into a club room on one side, and the observer's rooms on the other, with a few cubicles, if necessary, for sleeping accommodation. The building could be used to accommodate one or more members of the staff living on the site.

**Position and Size of Hangars**

The hangars may be placed on either side of the administrative block, or on one side only (Fig. 8); they are set back from the administrative block, so as not to obstruct the view from the latter.

FIG. 8



**Type of Hangar**

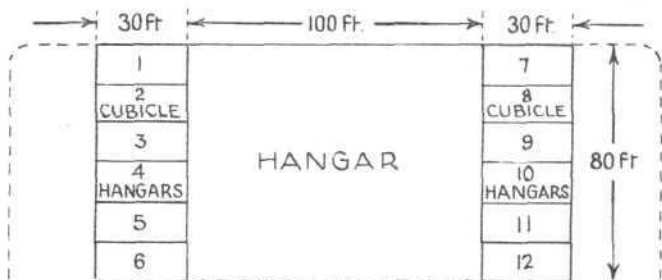
The hangar shown in Fig. 9 is large enough to house five aeroplanes of the Avro type; 12 light machines, whose wings are capable of being folded, can be run into the lock-up or cubicle hangars, either from the large hangar,

when not occupied, or from the outside. The elevation, Fig. 9A, was for a position near to a road, and when it was desirable, a pleasing structure should be in evidence.

The size of the hangar recommended is 100 ft. wide and 80 ft. in depth, one of 120 ft. by 80 ft. will comfortably enclose eight machines of the Avro type. The height of the opening exposed to the airport for the machines to enter is a minimum of 18 ft., and for future large passenger machines, 25 ft. in height; the interior available space should, in the latter case, be 30 ft., so that a crane, which can travel on the floor of the hangar, may have sufficient clearance when moving about, for the purpose of lifting the engine out of the machine for repair, or other purposes.

**Size of Aircraft**

The average 'plane used for passenger flights and for owner pilots does not require any greater height or clearance at the entrance than 18 ft., and as these will be the type of machine that will usually visit the airport, the first hangar should be one that will cater for such machines. If it becomes necessary, then another hangar, with a higher opening, would become a matter for consideration.



PLAN

FIG. 9

As the large machines have a wing span of over 90 ft., the opening of the hangar should be sufficient to allow this type to enter without inconvenience. It is questionable whether in the majority of cases the opening will be required above 80 ft. wide. Doors of the sliding type, 20 ft. wide, are the usual form, four or six runners depending on the width of the opening, each being placed behind the other so that they can slide into the same space at the end; or a series of angular frames, so arranged that when they are pushed to the side, they close up into a small space at each side of the hangar; or sliding shutters, which are rolled up to the underside of the roof, may be used.

**Private Hangars**

The small private machines flown by owner-pilots are usually fitted with wings that fold along the fuselage; by this arrangement they can be housed in a small space, about 30-ft. long, 11 ft. wide and high. A separate small hangar can be built to enclose a number of these cubicles with an open or closed gangway between the series so that the aircraft can be run into the selected cubicle from the gangway, or they could be placed on each side of the large hangar, which could be entered either from the hangar itself or from the outside (see Fig. 9). The number of cubicles to be provided necessarily depends on the number of owners locally who would desire to house their machines in separate lock-ups on the airport.

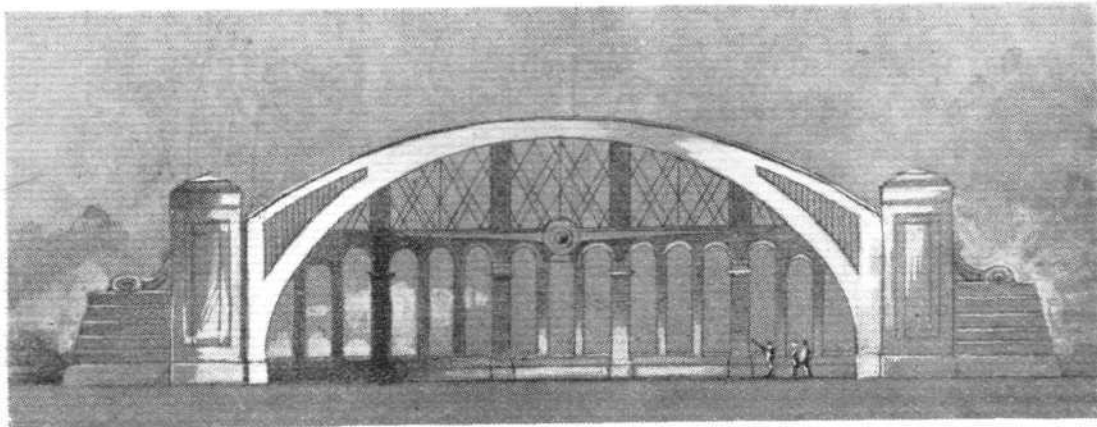


Fig. 9a : Elevation of the Hangar shown in Fig. 9.

Types of Steel Roofs

The roof can be made in a number of forms, and skeleton diagrams in Figs. 10, 11 and 12 show three types of trusses; there are, of course, many other types that can be designed and in a number of cases ferro-concrete structures are advocated which will be more permanent and, therefore, probably more costly to construct but less to maintain.

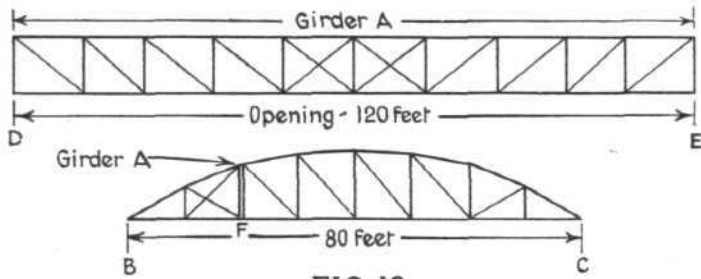


FIG. 10

In Fig. 10, the span is 120 ft. and the depth 80 ft., which would cover an area suitable for eight aeroplanes of the Avro type. D, E and C are the three outside walls, B is the opening. Girder A is placed some distance from the opening and is shown in the upper diagram, F to B is cantilevered, F to C is the type of truss for the remaining portion of the roof and placed at each of the verticals on girder A.

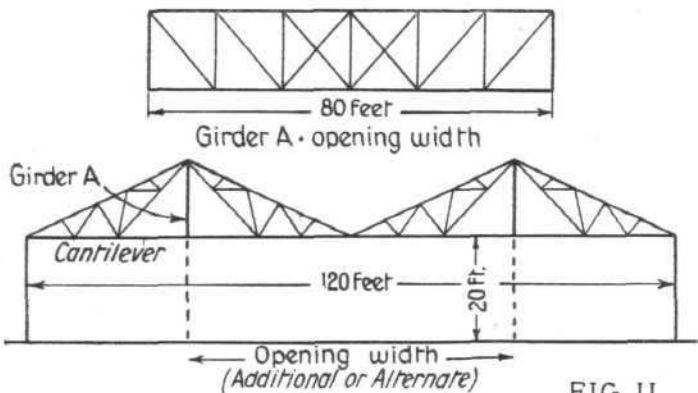


FIG. 11

Fig. 11 is another type of truss to cover the same area as Fig. 1. In this case there is a valley which may prove objectionable where there is a prospect of snow. The girders rest on the rear wall, and if the opening is 120 ft. or less,

then there must be a girder the full width of whatever opening is provided to support the front end of the cross girder trusses.

Fig. 12 shows an economical form of truss for a span of 100 ft., the depth can be made to suit the capacity required. The two side pieces at A and B can be conveniently used as lighting areas.

Lay-Out of Hangars

The hangars may have to be extended at some time, and it is necessary that they should be laid out with this in view (Fig. 8). If there is sufficient space facing the airport then they can be placed parallel with each other, and eventually they may be made with a ramp, so that a hangar may be superimposed on one underneath.

They may, if the space is not sufficient without interfering with the runways, be placed at right angles, in which case there must be sufficient space between each set of hangars to allow of the machines to be negotiated so as to enter and emerge from hangars so placed. The hangars should be well

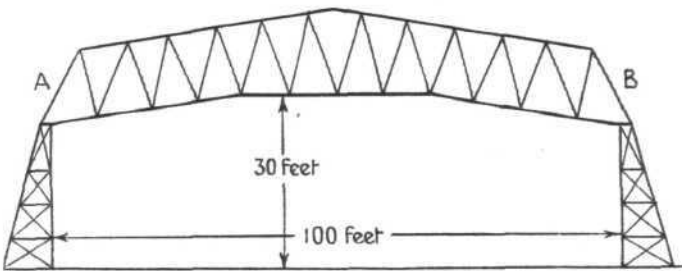


FIG. 12

lighted and from the roof, a north light being preferable. The window area should be about one-sixth the floor area at least.

The provision of a small workshop will also be found necessary.

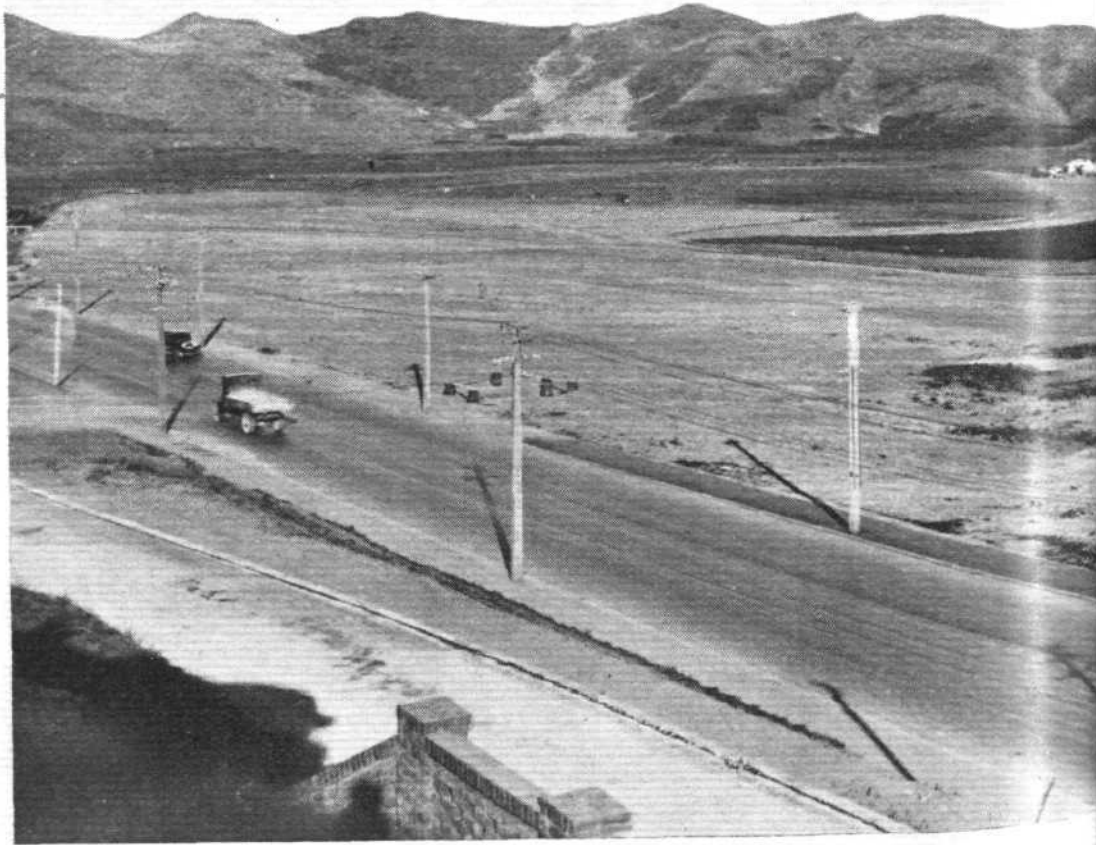
Petrol

The amount of petrol required to be stored will depend upon the usage of the airport, and should develop into a considerable quantity. The large machines may require 150 gallons at a time.

Petrol supply tanks can be purchased from any of the supply companies, or can be rented at the rate of £10 per annum, dependent on the size of the tank. The outfit includes pump, meter and register.

The petrol tanks should be placed near the hangar, supply pipes being taken to a point in front of the hangar itself so that machines of any size can be brought to the discharging point

A Colonial Airport in the Making: The accompanying panoramic photograph, which we have received from the High Commissioner for New Zealand, shows the operations in progress in connection with a new airport, which is being constructed at Wellington, New Zealand. As will be observed, the site is located



and quickly be accommodated. R.A.F. machines usually demand Aviation spirit, German machines use a mixture of petrol and benzol, and prefer that it should be separate so that equal quantities of such may be supplied into their tanks. Joy-riding machines usually use Commercial petrol. The Imperial Airways use No. 1 petrol.

**Tanks and Delivery Gear**

In order to supply these types of machines, it is necessary to have a series of tanks or a large one divided into compartments for (a) Aviation spirit; (b) No. 1 spirit; (c) Commercial; (d) Benzol.

The pumps should be capable of delivery at the rate of 15 to 25 gallons per minute with accuracy, and equally capable of supplying at a lower speed. It will be realised that machines will not desire to take up more than about 10 mins. at the outside for their tanks to be filled. The larger machines may require 150 gallons.

The point of supply can be placed underground, and there would be in this position pipes of a flexible character that would reach to the tank of the machine, or, alternatively, a post about 20 ft. in height can be erected from which the supply pipes can be taken to the tank of the machine.

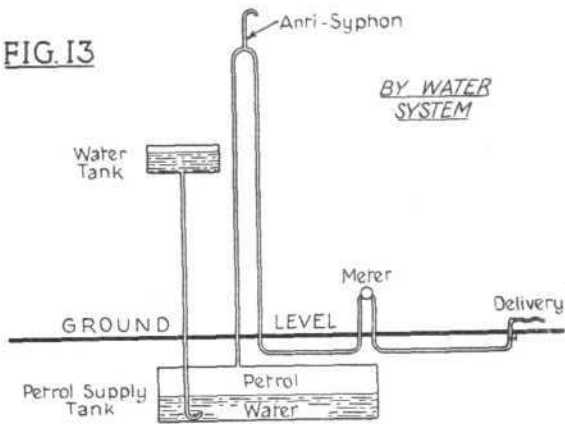
The Byewater system (Fig. 13) is a simple arrangement, which requires no pumps; a tank holding 1,000 gallons of water is placed in the roof of the hangar, and pipes from this tank are connected with the petrol supply tank. The supply tanks are, in their lower part filled with water and the petrol fills the remainder. Petrol does not mix with water, and floats on the top; any dirt or material that is heavier than water falls to the bottom of the tank. The water being under pressure, the petrol is thereby forced through the pipe to the supply outlet pipe in front of the hangar. There are meters placed in any suitable position that may be selected, and the man in charge of the meter house can supply the exact quantity required at a pressure, if necessary, of 25 to 30 gallons per minute. This method of supply is used at the seaplane bases for the Government, and seems to be well adapted for the purposes of an airport, where the supply to the machines acquiring petrol can be placed at any distance from the petrol store tank, and can be metered in a house for all positions of delivery. There is no loss from petrol vapourising in the tank, and fire risks are negligible.

There would also be required stores of oil, grease, etc., that may be required by machines using the airport.

**Design**

The hangar can be made of simple design, with corrugated iron or bituminously coated corrugated iron, or with asbestos sheeting, or in ferro-concrete or concrete and brickwork. Many of the hangars in aerodromes in various parts of the

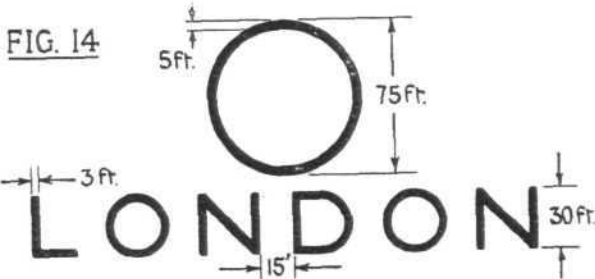
world are of a very elaborate character, and large sums of money can be spent upon them and their attendant offices, etc. This depends largely on the expected demand of the airport. Illustrations, accompanying this article, of various airports show the different styles of hangars and buildings



in use. It is desirable that a suitable design should be incorporated in the scheme, so that it shall not be a blot on the landscape.

**Name of Airport**

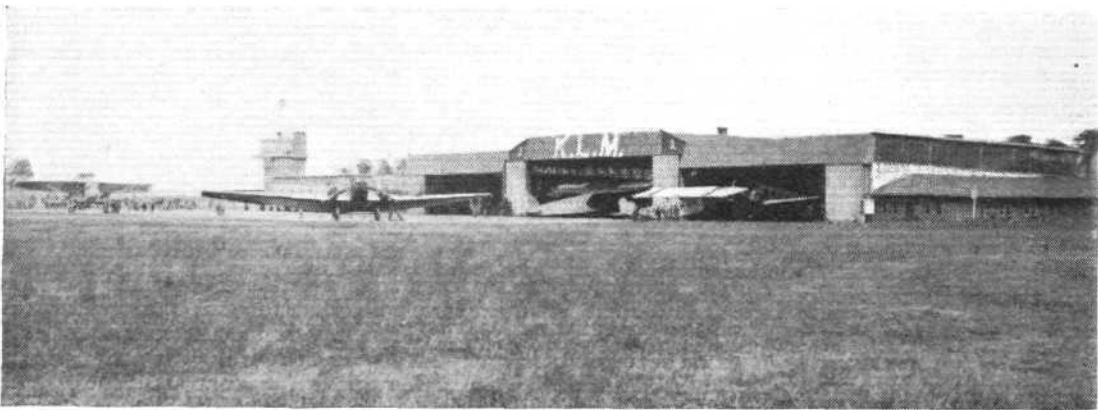
When the aerodrome or airport is laid out there should be in, or about, its central position a circular track about



75 ft. in diameter, and about 5 ft. wide, and the name of the town underneath it in large letters about 30 ft. deep, 3 ft. wide in the marking, and about 15 to 20 ft. between each letter (Fig. 14). The material used can be any white material, such as limestone, concrete, etc. The airman, in approaching



conveniently near the sea, facing Port Nicholson, so that this airport should be available for seaplanes as well as landplanes. It may be of interest to note here that an aerial transport company, known as Dominion Airlines, Ltd., has been (or is being) formed to operate air lines in New Zealand.



A Dutch Airport : The Schipol Aerodrome at Amsterdam.

the airport, will not only know the centre of the airport, but also the name of the town with which it is connected. The boundary marks also give him the limits of the landing space. In some aerodromes the north point is similarly marked out.

Lighting

The boundaries should be supplied with lamps, so that if any landing takes place at night the boundaries can be distinguished. In the centre of the ground an underground lamp, covered with strong glass level with the surface, would indicate the centre at night, and all the topmost areas of buildings should be fitted with red lamps, all of which can be switched on from one master switch in the superintendent's controlling room.

At the top of the hangar over the centre of the opening would be placed a lamp, which will light up the entrance, and combined with it and lit upwards could be placed the wind sleeve indicator or "sausage."

Rules and Regulations

There are rules or regulations necessary for the working of an airport which must be observed by all pilots. A copy (modified) to suit British airports is included in the appendix. It will be observed that there will be necessary certain other furnishings to comply with these regulations, which, however, explain themselves.

Landing Fees

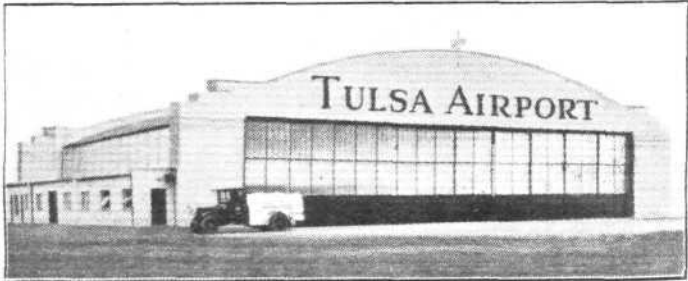
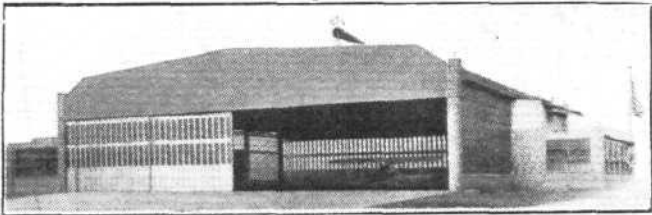
The landing and housing fees usually charged for civil aircraft are given in the accompanying table.

The fees quoted under column "Inclusive of Landing Fees" covers all landings carried out by one aircraft in any particular month.

In the case of aircraft with wings capable of folding, the class for landing charges will be calculated on the basis of the size with wings open, and the class for housing charges on the basis of the size with wings folded, if, in fact, the wings are folded. Special terms can be arranged for private lockup hangars to suit machines with folded wings.

Fire Apparatus and Tractors

Fire appliances in the form of chemical extinguishers and a first-aid outfit should be provided.



Three examples of American Hangars.

Class.	Occupying Floor Space up to	Passengers and Goods Aircraft				Private Aircraft				
		Daily		Monthly		Daily	8 hrs.	24 hrs.	Monthly	
		Landing	Housing	Exclusive of Landing Fees.	Inclusive of Landing Fees.	Landing	Hou sing	Exclusive of Landing Fees	Inclusive of Landing Fees	
	Sq. ft.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	s. d.	s. d.	£ s. d.	£ s. d.
AA	500	2 0	3 0	4 10 0	6 10 0	1 0	1 0	2 6	2 10 0	3 10 0
A	900	5 0	5 0	6 0 0	11 0 0	2 6	2 6	5 0	5 0 0	7 10 0
B	900-1800	10 0	10 0	10 0 0	20 0 0	5 0	5 0	10 0	10 0 0	15 0 0
C	1,800-3,600	1 0 0	1 0 0	20 0 0	40 0 0	10 0	20 0	20 0	20 0 0	30 0 0
D	Over 3,600	1 10 0	1 10 0	36 0 0	56 0 0	10 0	30 0	30 0	30 0 0	40 0 0
E	Do. with more than 2 engines	1 10 0	1 10 0	36 0 0	66 0 0	15 0	30 0	30 0	30 0 0	45 0 0

A heavy machine will be able to taxi up to the flying space outside and in front of the hangar, but as it would be forbidden to allow the engine to be running inside the hangar, it would be necessary to have a sufficient number of men available to take the machine into the hangar, or, alternatively, it would be preferable to employ a small caterpillar (rubber tyred) tractor, which would not only be available

for this purpose, but would also be useful in other employment, i.e., taking the roller out on the ground or for the grass-cutting machine.

(Next week we conclude this article on Airports with an Appendix, which will include specimen forms for records and reports suitable for employment in the operation of an airport.)

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### PERFORMANCE FIGURES

#### ATLAS WITH JAGUAR ENGINE AND TOWNEND RING

Fuel, 75 gallons (337 litres). Oil, 7 gallons (32 litres). Military Load, 880 lbs. (400 kgs.)

	Plain Engine.	Geared Engine		Plain Engine.	Geared Engine.
Approx. total weight	4000 lbs. 1820 kgs.	4115 lbs. 1870 kgs.	Time to 5000 ft.	5.25 minutes	4.25 minutes
Speed at ground level	143.5 m.p.h.	149 m.p.h.	" " 10000 ft.	12.5 "	10.5 "
" " 5000 ft.	231 km.p.h.	240 km.p.h.	" " 15000 ft.	26 "	21.75 "
" " 10000 ft.	139.5 m.p.h.	145 m.p.h.	" " 1000 mtrs.	3.5 "	2.5 "
" " 15000 ft.	134 m.p.h.	140 m.p.h.	" " 3000 "	12.5 "	10.25 "
" " 1000 metres	125 m.p.h.	131 m.p.h.	" " 5000 "	34 "	27.5 "
" " 3000 metres	226 km.p.h.	236 km.p.h.	Absolute Ceiling	19000 ft.	19100 ft.
" " 5000 metres	216 km.p.h.	225 km.p.h.	Service Ceiling	5800 metres	5830 metres
	193 km.p.h.	204 km.p.h.		17300 ft.	17700 ft.
				5280 metres	5400 metres
	Maximum allowable R.P.M. 2200. Normal R.P.M. 2000				

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## THE AIR CONFERENCE ON THE NECESSITY FOR MUNICIPAL AIRPORTS

SIR ALAN COBHAM'S recent tour of Great Britain was carried a step further on Tuesday, November 5, when some 250 representatives of local governing bodies, who have shown their wisdom by their interest in the establishment of municipal aerodromes, attended the Conference on the Necessity for Municipal Airports. This conference was convened by the Royal Aeronautical Society, the Royal Aero Club and the Air League of the British Empire, and was held at the Institution of Electrical Engineers, Savoy Place.

Sir Charles Wakefield, with his proverbial munificence, entertained the various authorities at a dinner at the Savoy Hotel in the evening.

The conference was not so much a conference as a series of lectures by eminent authorities, whose information was designed to tell those concerned nearly all they could wish to know on the subject of establishing an airport. Assuming they knew little about it before, they could have hardly got away without having gained a very vivid impression as to what an airport was and how they should set about establishing one themselves. A good deal of the information, while extremely interesting, especially to those who already know something of the subject, struck one as being rather beyond the scope of the conference inasmuch as it dealt with the management of such advanced airports as Croydon, while many of those present had little idea as to what constituted a municipal aerodrome, let alone a municipal airport; however, there was no doubt that all learnt a great deal from the lectures and should they not be already seriously considering the establishment of an aerodrome will undoubtedly be led to do so as the outcome of the conference.

The importance of this has been up to the present somewhat overlooked, but there are signs on every side that municipal authorities are no longer going to let themselves be left behind, and we rejoice to see the genial rivalry which is already springing up between the authorities of various towns and cities. *FLIGHT* has long endeavoured to help in preaching the gospel which Sir Alan Cobham has recently so ably put before such a large number of mayors and others, and in the present issue is the third instalment of an authoritative article on the subject of laying out and equipping airports which we trust has proved helpful to all those who are now realising the importance of making their towns and cities air-minded.

His Worship the Mayor of Westminster, in opening the Conference, said:—

"I am honoured to preside on such an unique occasion in the history of this country, and I give you a hearty welcome to the City of Westminster as representatives of the civic voice of Great Britain. The occasion is unique for several reasons, but principally because this meeting should mark a turning point in our career as a nation. We have definitely entered a new era in the world's progress.

"The air age has arrived, and its future effect on our daily lives cannot be estimated.

"As a nation, it has been our privilege in the past to lead the world in almost all forms of progress for the betterment of mankind.

"We have become a prosperous nation because our forefathers established and maintained the freedom of the seas.

"Man's conquest of the air dates back only 25 years. It seems to me, therefore, the duty of us to the coming generation is to develop a form of progress which will decide whether we are to remain in the front rank or not.

"The speakers who follow me will outline to you the progress which has been made already and the steps which are yet to be taken.

"It seems to me that the connection between municipal aerodromes, which you are all here to consider, and the prosperity of the nation is briefly that taking it for granted air transport is one of the most important forms of communication in the future, it is necessary to prepare for it suitable bases for operation.

"Everyone engaged in municipal work knows that the prosperity of his town depends on trade.

"Trade by air has already assumed such proportions that it behoves every town to prepare for its reception as a matter of course.

"I need not emphasise what the development of railways has meant to our country. The development of airways

will be of even greater significance, but unless we prepare ports for the reception of aircraft no real development can take place.

"Once again let me offer you a most sincere welcome to Westminster."

At the conclusion of the conference the Lord Mayor of Hull, Councillor Benno Pearlman, on behalf of the visiting mayors, in moving a vote of appreciation, said:—

"I gladly accede to your suggestion that I should voice the feelings of everyone present by expressing a very deep satisfaction at the very splendid way in which the gathering has been addressed by experts on aviation. We started in Hull as novices and like all novices we made mistakes, but the result has been worth while. On the opening day of the aerodrome we held an air pageant. I do not know how many people attended, but I think on that day we, in the city of Kingston-upon-Hull, taught the country a lesson in air-mindedness, which was indeed impressive. As a result we shall be able to hand over to the medical charities of the city no less than a thousand pounds from the takings. To make an aerodrome successful you require the patience of Job and the temperament of an angel from heaven. I do not possess either; but I do desire to impress you with the fact that this country is unquestionably behind the other great countries that have been referred to in aviation. To make a municipal effort successful, you require enthusiasm, initiative, enterprise, and you also require the backing of the City Fathers. Those of you who contemplate putting into operation an aerodrome are going to benefit by the errors which we made. I found out since the institution of the movement in my city that there are authorities in London and there is Sir Alan Cobham and others who are prepared to advise the uninitiated in the way to achieve success. It is not fair to a city like Kingston-upon-Hull to leave them with their enterprise whilst the other municipalities are somnolent. One swallow does not make a summer, and one aerodrome is not going to produce that standard of aviation to which we are entitled. In a very short time people who want to fly will be able to proceed from one part of the country to another. I will content myself with moving that the very best thanks of this gathering be extended to each of the gentlemen who have come here to give their experience today."

Mr. Montague, who deputised for Lord Thomson, then said:—

"I want on behalf of the Secretary of State to express his gratification at the presence of so many representatives of municipal authorities at this conference. The conference is a highly representative one, and we feel sure the result of its deliberations will be in due time of very great value to the cause of civil aviation. The need for and usefulness of municipal airports has been brought under public notice very prominently by the recent tour of Sir Alan Cobham in his *Giant-Moth*. He has visited over 100 of the principal cities and towns in Great Britain. A very wonderful achievement indeed, and has given flights to 40,000 passengers. That flight was made possible by the generosity of Sir Charles Wakefield, who has been described as the patron saint of civil aviation. The question of the establishment of aerodromes by local authorities is one which since the war has received the most active consideration by the Civil Aviation Department of the Air Ministry. It was for this reason that a provision was inserted in Section 8 of the Air Navigation Act of 1920 that the local authority, with consent of the Air Council, should have power to establish and maintain aerodromes and to acquire land for that purpose, and that a local authority providing an aerodrome under this section should have power to carry on any subsidiary business to be ancillary to the carrying on of the aerodrome. The next stage was in 1922. The Air Ministry and the Ministry of Health in close touch with one another, arranged that when town-planning schemes were under consideration the provision of a civil aerodrome should not be lost sight of. A letter was sent to local authorities pointing out growth from 1921-7, and expressing the desirability of more aerodromes throughout the country if the industry is to derive full advantages from air transport. It is as necessary to possess well sited aerodromes as railway stations, roads, garages, etc. A recent writer in a magazine said that the time is not far distant

when every home would have its aircraft shed, as there are close on 10 million homes in the country the prospect is a very alluring one. The Air Ministry advises establishing municipal aerodromes with as little delay as possible, and promises to forward information regarding general requirements for a municipal aerodrome and to advise as to suitability of any sites. The next step was to stipulate in the agreement which they made with National Flying Services that payment of grants under the agreement would be dependent on an undertaking to provide directly or indirectly 20 new aerodromes and 18 new landing grounds in this country within three years. It is worth noting as a result of the Air Ministry's policy, municipal aerodromes have already been licensed at Blackpool, Hull, Nottingham and Wythenshaw. Ground has been purchased for municipal aerodromes at Carlisle, Bristol, Liverpool, Manchester, Plymouth and Stoke-on-Trent. Four

towns have reserved sites in town-planning schemes, and 70 towns have shown active interest in the matter or are awaiting inspection of their sites. It will thus be seen that over 100 municipalities are actively interesting themselves in the establishment of municipal aerodromes. The subject has now been brought in a very direct way to municipal authorities by Sir Alan Cobham's tour. I wish, before sitting down, to express the hope that this conference will prove interesting and instructive and fruitful of results, and express regret that Sir Sefton Brancker, the Director of Civil Aviation, who is extremely and vitally interested in the subject, is unable to be present. I am sure his mind is here and his interest is with you in this question of encouraging municipalities of the country to encourage in their turn this important development of airport progress throughout the United Kingdom."

## ADDRESS ON THE WORLD'S AIR ROUTES

By COLONEL THE MASTER OF SEMPILL, *President of the Royal Aeronautical Society*

COL. SEMPILL said he must first of all offer an apology for the absence of Sir Sefton Brancker, who had been detained in Italy. Following on, he said:—"I will make a very brief survey of the world's air routes, and I will try to show what other nations have done, and where the British Empire stands. I will try not to overwhelm you with statistics, but I would say to those who are interested that the Air League of the British Empire will supply information and will provide speakers to attend your meetings and give an address should you desire it. You will have, in many cases, co-operated already with the Royal Aero Club, which organises all sporting competitions, such as the Schneider Trophy Contest and the King's Cup Race.

During 1929, the world's scheduled air routes totalled 122,600 miles. Approximately 55,000,000 miles will be flown on schedule over these routes during 1929, as compared with 23,000,000 in 1927. In two years the mileage flown has more than doubled.

The following figures show the route mileage and daily mileage:—

	British Empire	France	Germany	America
Route mileage ..	16,426	16,000	16,500	35,198
Daily mileage ..	10,818	18,806	37,500	80,691

### France

France, as shown on the slide before you, has adopted a bold and far-sighted policy, believing to some extent in the freedom of the air. The principal routes developed, or being developed by France are:—(1) Through Central Europe to Constantinople. (2) Through Southern Europe to Syria and the Far East. (3) Through Spain and West Africa to South America. (4) Through Spain to the Sahara, and Congo to Madagascar.

She has as well many local European services. For instance, Paris to Berlin, London, etc.

As regards her South American services there are daily services as far as Casablanca and weekly service onwards.

The mails, at present, are carried from the Cape Verde Islands to South America by ships, but in South America they are conveyed to Rio de Janeiro and Buenos Aires and across the Andes to Santiago by aeroplane.

The French are also working to develop big flying boats capable of crossing the South Atlantic. When this comes about the whole 7,900 miles will be done by air.

France's subsidy in 1929-30 amounted to £1,400,000. In next year's budget £1,680,000 is put down. In addition, the French Colonies give considerable assistance to lines crossing their territories.

### Germany

On the whole, Germany is opposed to freedom of the air. She was very largely hindered after the war by the terms of the Peace Treaty, and therefore she created factories outside Germany to get round the regulations, in Italy, Switzerland, Sweden and Denmark. The Peace terms were modified in 1926, giving her freedom of design. This resulted in the formation of the Lufthansa. Germany has extensive European services, as you can see on the slide, branching into Russia in the North and downwards towards South America. She has also made a considerable development in night flying. The subsidy is being reduced to about £650,000, owing to financial stringency, and economies have resulted, but loans, assisted by the Government, may be floated,

enabling the air routes to be carried on to their full extent and developed. The Lufthansa in 1928 carried 111,000 passengers. It is using chiefly all-metal monoplanes. The Do.X., with its 6,000 h.p. in twelve engines, which recently flew with over 150 passengers, is a forerunner of the future big flying boat; fully loaded it weighs 52 tons. It has a cruising speed of 112 m.p.h. There are three decks. On the upper deck is the captain, crew and engine-room staff; on the middle deck are the passengers; and the lower deck is for fuel, baggage, etc.

### United States

In the United States the air services are exploiting the long distances which they have, and there are no international complications. The air route New York to San Francisco, 2,700 miles long, is flown in 36 hours, including night flying; and New York to Los Angeles, 3,000 miles long, in 48 hours. In this case passengers have two days in the air and two nights in the train.

During 1928, in the United States, there were flown on schedule 7,035,000 miles. The air companies received in revenue from postal contracts £1,500,000.

In 1928 there were 8,375 commercial pilots' licences applied for and 4,885 issued. Aircraft licences applied for were 6,611, against 3,165 issued. In the same year, 10,000 miles of airways were lighted for night flying.

Three years ago there were no safety regulations in the United States, and people could do what they liked. Now things are strictly controlled.

In 1928, flying 11,000,000 miles, nine pilots and thirteen passengers were killed, and this cannot be considered excessive, in view of the conditions.

### Australia

Australia leads the British Empire. It is the only bright spot, indeed. The subsidy for 1929 was only £80,000, while for Britain it was £354,000. In 1928 their machines covered 421,900 miles, and this year it will be close on 500,000. It is gratifying to note that they are using all-British machines.

### Canada

Canada is only just beginning air transport, and has mostly concentrated on air survey and forest fire patrol up till now, for which purpose seaplanes are largely used. In 1929 she has already got 3,400 miles of organised routes, and has 25 organised air-transport companies. The Government gives no subsidies, but very generous mail contracts are placed which replace the subsidy. She cannot boast the same as Australia, for, unfortunately, she almost entirely uses American aircraft.

The rest of the Empire has done very little as yet, but affairs in South Africa and British India are coming along, and before long we should see the efforts of our pioneers, such as Sir Alan Cobham, bearing fruit in these countries. The slide will show you the relative positions of the units of the Empire in point of time were it possible to go by air, flying by day only, and, of course, with night flying these will be brought much nearer still.

### Imperial Activities

Now we come to Imperial activities. The Channel services have served as a useful full-scale experiment, and in 1925-28 there were no fatal accidents. 1929 has, however, not been so fortunate, but the record is still good. In 1925 11 per cent. of flights were delayed or interrupted for mechanical reasons, while in 1928 this was only a little over 4 per cent.



A General View of the Conference.

Developments are taking place all the time, and the new 40-seater machines on order for Imperial Airways are well under way and the first will be flying next year. The Karachi service has had a good record, but time taken over the route can and will be cut down by the introduction of night flying.

In Africa, Sir Alan Cobham and Capt. W. E. Gladstone have combined with Imperial Airways, and their labours are now bearing fruit. South Africa has agreed to spend £400,000 in five years, and small subsidies are being provided by the other British territories in Africa. The Cairo-to-Kenya portion of route is to be opened next summer, and the Kenya-to-the-Cape section six months later. The journey from Cairo to Cape Town will only take nine days at the start, and even that will be greatly reduced when night-flying facilities are provided.

### The Sovereignty of the Air

The International Convention for Air Navigation drawn up during War stated that every nation adhering to the Convention should allow other adherents to fly over advertised routes. This, however, never worked out in practice. We, following our custom of the freedom of the seas, have advocated the freedom of the air, and we put forward this policy in Paris last June, and were backed by the United States, Holland, and Sweden. We were the only four in favour, and the motion was rejected by 27 votes. So long as Government subsidies are necessary Government interference will continue, because the tax-payer naturally wants something for the subsidy which he provides, and therefore urges the Government to obstruct foreign activities in competition.

### ADMINISTRATION OF AIRPORTS.

By Maj. L. F. RICHARD

The personnel required varies with the amount of traffic and the nature of the traffic which uses it. It also varies with the facilities offered. An aerodrome used for the landing of one or two small machines a day, obviously requires the minimum of personnel, namely, one man.

I propose to tell you, first, how such an aerodrome can be administered, and then go on to tell you how an airport of the capacity of Croydon is administered.

For the former case I will base my remarks mainly on how the aerodrome at Penshurst is administered, as I have personal experience of the workings of it as well as Croydon. At Penshurst Aerodrome only one caretaker is necessary. He is directly responsible to the Chief Aerodrome Officer at Croydon, in the same way as at a municipal aerodrome he would be directly responsible to his municipal authorities. Penshurst is maintained for emergency purposes for machines which are unable to reach Croydon on account of weather or other reasons. Accordingly, the number of landings are very few.

I consider it essential that the caretaker should live on the aerodrome, so that he can be immediately available when a machine lands. The caretaker should be carefully chosen. He should possess tact, and for preference be married.

His duties should include the following:—

- (1) To provide all possible assistance to pilots in guiding machines whilst taxiing, and assisting to take machines in and out of hangars. If a machine is too big to be placed in the hangar, or there is no hangar available, he should assist in pegging it out. For this purpose a supply of pickets and rope should be provided.
- (2) To prevent unauthorised people from being on the aerodrome. This is most essential so that machines landing or taking off should not be baulked.
- (3) To inspect all aerodrome equipment frequently and immediately report any defect to his authorities which he cannot remedy himself. A stock of wind-indicating sleeves should be available, so that he can replace *immediately* any one which is blown down or damaged.
- (4) To collect or obtain the pilot's signature for landing and housing fees and telephone calls.
- (5) To keep a record of all landings and departures.
- (6) To make good, as far as possible, all minor damage to the surface of the aerodrome where cut by tail skids.
- (7) To report to his authorities immediately any abnormal or untoward incident.
- (8) To be able to give a simple weather report of the conditions prevailing at any time.
- (9) If grazing takes place, he should make certain that the cattle or sheep are kept definitely under control. The part on each day where grazing takes place should be pointed out to the shepherd, with due regard to the direction of the wind at that time.

The aerodrome and its equipment should be inspected periodically by a qualified person.

That, I think, should show you how an aerodrome offering limited facilities can be looked after by one man with occasional reference to his authorities.

As the traffic on this type of aerodrome increases, it is obvious that the personnel to handle it must also increase. Greater facilities will be offered, which again means further increase in staff.

This brings me on to the administration of a large airport.

The aerodrome at Croydon is under the administration of a Chief Aerodrome Officer, who is assisted by five aerodrome officers. The Chief Aerodrome Officer is responsible for the efficiency of his personnel and equipment. He is also responsible for the enforcement of the Air Navigation Regulations and local regulations. It is considered very essential that these regulations should be firmly enforced, as the safety of flying in the vicinity of a much-used airport is greatly dependent on their observation. He is further responsible for the effective and speedy handling of all machines and their loads, and in general is responsible for the smooth running of the aerodrome as a whole.

The Senior Aerodrome Officer is responsible for the detail supervision of aerodrome equipment, including aerodrome lighting, motor transport, fire appliances, etc. He is closely in touch with the affairs of the aerodrome, and takes over the running of it in the absence of the Chief Aerodrome Officer. When necessary, he carries out control tower duty, along with the other aerodrome officers.

The aerodrome officers' duties are mainly carried out in the control tower, which are briefly as follows:—

Control of aircraft on the ground and in the air, in the vicinity of the aerodrome.

Control of, and giving assistance to, aircraft in flight on the various routes. He can be of particular assistance to aircraft during bad weather. He will warn pilots of machines of their proximity to others, and, if necessary, instruct them to fly at different heights. By means of wireless messages and the firing of pyrotechnics he will assist pilots in locating the aerodrome.

In the absence of the Chief Aerodrome Officer, the Senior Aerodrome Officer on duty will take over the control of the aerodrome.

**Lighting.**—The aerodrome officer (there is always at least one aerodrome officer on duty on the station throughout the 24 hours) is responsible for the putting into operation of the various lights. These consist of the aerodrome location light, which consists of a number of flashing Neon tubes, a powerful mobile floodlight for illuminating the surface of the aerodrome, flashing lights indicating the perimeter of the landing area, and fixed obstruction lights on all buildings.

A look-out is stationed on the balcony of the control tower. Before a machine may leave the Customs area in front of the main administration building, a disc must be displayed bearing the initials of the firm concerned, indicating that it is safe for the aircraft to taxi out into position to take off. The aircraft cannot take off until a further signal is given by the look-out by means of a powerful lamp. These two signals are given after the look-out has referred to the duty officer.

The look-out is also responsible for "spotting" all arriving aircraft. When one is sighted he will press a switch which is connected up to a powerful Klaxon horn, indicating by Morse code signals the firm to which the machine belongs. This gives notice that the traffic staff is shortly required for unloading the machine and indicates to the air line concerned that their machine will shortly land, and that the passenger cars will be required.

**Meteorological Office.**—Situated below the control tower is the meteorological office, which issues periodically reports from all aerodromes on the various continental routes. These are available to pilots before departure, and the services of a skilled meteorological officer are also available for the guidance of pilots. These weather reports are transmitted by means of pneumatic tube to the control tower, where they can be sent out to pilots by wireless telephony on request.

**Communications Office.**—The control room is also connected by pneumatic tube to the office known as the communications office, where all inter-aerodrome messages are made out in code for despatch by wireless telegraphy and are decoded on receipt and passed to the control room. Thus the aerodrome officer on duty is kept aware of the landings and departures on the continent.

There is a wireless receiving and direction-finding apparatus (whereby pilots can be told their exact position in the air at any time) in the control tower, where two wireless operators are constantly on duty.

Wireless transmission is effected from a station on Mitcham Common a few miles away, speech and telegraphy being conveyed there by land telephone.

**Method of Handling Passengers.**—All outgoing passengers on arrival at the aerodrome are taken over by representatives of the company by whose line they are flying. Their passports are passed on to the representative of the Special Branch of Scotland Yard. The passengers are shortly afterwards conducted past this officer, when their passports, which have been examined, are returned. They then proceed to the waiting aircraft, which is drawn up in very close proximity to the exit door.

Incoming passengers are directed, after leaving the machine, to the Customs examination hall, where the usual Customs examination of luggage is carried out. After examination the luggage is immediately loaded on to the waiting cars, whilst the passengers pass the immigration officers. By this time the cars should be loaded, and the passengers are driven off in as short a time as possible.

There is little use in economising time by flying if the terminal ground organisation is slow. Every minute saved in handling passengers and their luggage brings Paris, Amsterdam, Berlin, etc., nearly two miles closer to London.

The handling of luggage and goods is done by the traffic staff, which work in shifts throughout the 24 hours. As the number of machines landing and leaving the aerodrome have, on occasions, been up to 60 in and 60 out in a day, apart from local short pleasure flights, it will be observed that a large traffic staff is necessary.

Apart from handling baggage and freight, this staff handles all machines not belonging to the regular air lines, amongst other varied duties. The foreman of this staff requires careful selection.

**Aerodrome Police.**—Police pensioners are employed on the aerodrome, at least two of whom are on duty throughout the 24 hours. Their duties are to see that the Customs and Immigration regulations are observed and generally to police the aerodrome by day and night.

**Maintenance of Aerodrome.**—The buildings and the surface of the aerodrome are maintained by a staff of the Works and Buildings Department. This staff includes electricians, groundsmen, roller drivers, stokers, and labourers.

**Publicity.**—Show your airport to the public. The British public is now taking a real live interest in aviation. Give the public a chance to watch your activities. At Croydon the public can watch the flying all day from an enclosure on the edge of the aerodrome for the payment of 1d. per head. There is also a guide whose sole full-time job is taking people round the airport. The charge for his services is 6d. per head, which price includes the issue of a booklet describing the airport.

He is absolutely *au fait* with the activities of the aerodrome. He can explain our methods of working and give details of the various machines which use the airport. Many appreciative letters have been received regarding visitors whom he has conducted.

The more you show your airport the more traffic and revenue it will eventually bring.

I have had to condense a very vast subject into very small dimensions. I have endeavoured to indicate what I believe to be the minimum method of administering an aerodrome and the methods employed to administer a great airport.

All aerodromes in which you are, or will be, interested fall between the two, and possibly what I have told you may be of assistance in deciding on your staff and your methods.

## ADDRESS ON THE LAYOUT AND EQUIPMENT OF AIRPORTS

By MAJOR R. H. S. MEALING

My task is to suggest to you the manner in which your airports should be laid out and equipped.

Before actually proceeding, though, to suggest how you should layout and equip your airport, I should like to refer briefly to a misapprehension which I know exists regarding the matter of licensing your airport.

It is necessary that your airport should be licensed for use by the Air Ministry as it will be used regularly by aircraft flying for hire or reward.

The licence signifies that the airport so licensed, provides an area of land sufficiently large and level so that under any conditions of wind an aeroplane can land there and take off safely. The buildings and equipment are not licensed as such.

This brings me to my first point, namely, the provision of a sufficiently large and level area of land.

It has been laid down by the Air Ministry as one of its conditions for licensing a public use airport, suitable for all types of aeroplanes, that a site for an airport must measure at least 600 yards in all directions. But it must be remembered that whereas 600 yards is the minimum dimension which can be allowed, it is very advisable that a good airport should measure not less than 1000 yards in all directions, and certainly that distance into the prevailing wind.

In fact, I cannot say less than that where airport dimensions are concerned, the more the better.

I sometimes, though, have put to me the questions, is it not a fact that in time to come aeroplanes will be able to land on the equivalent of a tennis court? I am not going to suggest that they will or they won't, but the fact remains that not more than one will be able to land or take off from a tennis court at a time and that, therefore, if we do succeed in having such a machine in the future we will still want a large enough area of land to enable more than one to land, or to take off from and to be parked at the same time.

Therefore, so far as I can see, we have not by any means reached the stage at which we require less than the area of land I mentioned just now, namely, one measuring not less than 600 yards in all directions, and preferably 1,000 yards in all directions.

That means that in all we require not less than 75 acres of available landing space, and as much more as we can get up to 200 acres.

Having dealt with the matter of dimensions, we now come to the matter of the requirements regarding surface level.

Naturally the ideal to be aimed at is to have your airport as level as a billiard table. If that is not impossible, it is at least likely to prove extremely expensive, so the next best thing is to have it as level as possible within certain limits.

The Air Ministry have recommended that the average gradient throughout the surface of any airport should not exceed 1:50, and that the gradient of any particular undulation should not exceed 1:40.

A rough and ready, but nevertheless a quick and practical test for the actual surface level of an aerodrome is to drive a motor car over it at 20 m.p.h., and if that can be done without undue inconvenience to the passengers you can take it for granted that the surface is good enough for an aeroplane to land on it. Equally, if one can drive a fully-laden 3-ton lorry over it without any tendency for it to sink in other than that caused by lack of grip between the wheels and the ground, it can be stated that the ground is firm enough for an aeroplane to land on it.

Fully-loaded present-day aircraft vary in weight from under 2,000 lbs. to over 20,000 lbs., and the latter weight, having regard to the amount of tyre surface in contact with the ground, resolves itself into a pressure of just  $\frac{1}{2}$  ton per sq. ft., so that is the minimum pressure which your aerodrome surface has to stand up to.

We are very fortunate in this country in that we can comparatively easily provide and maintain a turf surface, so that only under very exceptional circumstances should it be necessary to provide any artificial form of surface.

Whilst retaining in mind the matters of dimensions and level to which I have referred, there is only one further condition for licensing an airport, and that is that there must not be any surrounding obstructions such as tall trees, chimneys or anything else which could be a danger to aircraft landing and taking off from that airport. Whilst referring to obstructions it is as well to remember that any such obstruction on or near the perimeter of an aerodrome diminishes the available landing or taking-off area surrounding that obstruction by not less than ten times, and on an average fifteen times, the height of the obstruction.

Thus we see, so far as obtaining a licence for your airport is concerned, all that one need worry about is that it is large enough, it is level enough, and that it has clear approaches on all sides.

I now come to what, for want of a better term, I call the luxury side of an airport. Actually, the equipment I am going to suggest to you is by no means a luxury, but a progressive necessity—that is to say, a luxury only in so far as such equipment is not a requirement of the licence.

It is neither necessary, nor, in these hard times, is it desirable that every local authority should consider establishing a miniature Croydon, but it is certainly desirable that some equipment should be provided. Now I will assume that you have provided your landing area, that it has been licensed, and that an aeroplane has landed there. What are the most meagre requirements for aeroplane, pilot and/or passengers?

In order to assist the pilot, if he does not already know it, to recognise your airport, is to mark its surface with what is known as a landing circle and the name of your town.

An aeroplane when landing always has to land against the wind, therefore the pilot will require to know the direction in which the wind is blowing. The simplest form of equipment which you can provide to assist him to judge the direction of the wind is a wind sleeve. This sleeve is made of fabric in the form of a truncated cone 16 ft. long, with a diameter of 3 ft. at the large end, and at the small end of 2 ft. This sleeve is attached at the large end to a pole approximately 30 ft. high.

The pilot can now see the direction in which he should land.

The next thing which the machine requires is a supply of petrol and oil.

The petrol should be contained in an underground tank and the oil in portable tanks.

If the aeroplane has a water-cooled engine installed, it may also require some water for its radiator.

So much for the aeroplane.

Now the pilot or his passengers may require to obtain a taxi to proceed to their destination, so that if one has not been ordered in advance, it will be necessary to have a telephone to obtain one. Therefore a telephone should be installed.

With the aircraft, pilot and passengers having obtained their barest necessities, it may be considered that your airport is equipped, but it must be added that it is equipped only in so far as it could not possibly be less equipped.

I will, therefore, proceed on the lines that your airport is to be better equipped and when considering this better equipment, one must retain in mind facilities for passengers, for mails or freight, for the pilot, for the aircraft itself, and last, but not least, for sightseers to your airport.

For the passengers there will be required booking offices where they can obtain their tickets. Very likely they will also require some refreshment either before leaving or after landing, therefore a buffet if not a restaurant should be provided.

Waiting rooms with lavatory accommodation will be required, and just as every large main-line railway station has its hotel, so will the equivalent airport of the future require its hotel.

Facilities for the receipt and despatch of freight and mails will be required.

A rest room and possibly sleeping accommodation for pilots should be provided.

For the aeroplane itself, a hangar complete with workshops will be required.

With the introduction of all-metal aircraft, the time will come when, so far as housing such aircraft is concerned, a hangar will not be required for the reason that it will do no more harm to that aircraft to stay in the open than it will harm a ship to be left floating and not dry-docked every time it comes into harbour. But accommodation will always be required for the execution of repairs, for no mechanic can successfully carry out the many detail jobs of work required unless he is working under cover.

Workshop accommodation will, of course, always be required.

I mentioned just now that last, but not least, sightseers should be considered.

It will be necessary to have some enclosure from which the visitors can watch the flying. Encouragement should be given to every form of attraction to sightseers, for it must always be remembered that they are the potential air passengers of the future who are going to help turn your airport into a revenue-producing concern.

So fully has this been realised in Germany that a most delightful enclosure where one can sit and watch the flying, have tea, listen to music and have a most interesting day's outing has been provided at the Tempelhof aerodrome at Berlin.

Assuming that you now have your fully-equipped airport supplying more or less full facilities for aircraft, personnel, passengers and freight, one might think that nothing more can be required, and no more will anything extra be required in the near future, but whilst one is building for the present, it is just as well to plan for the future.

So far, we have dealt with facilities for an aeroplane landing by day. Incidentally, one should refer to the provision of radio and meteorological facilities at every air port, but whilst the provision of such facilities are under consideration by the Air Ministry I cannot say more at present.

Now, night flying is rather a different proposition to day flying, inasmuch as quite a lot of extra equipment is required at an airport to enable an aeroplane to land safely by night.

I mentioned that by day, to enable a pilot to recognise your airport, you have a landing circle and name of your town marked in the ground. By night it equally requires some easy means of recognising it.

For that purpose, we use what is known as a location light; this is a miniature beacon, of such a distinctive colour that it can easily be distinguished from all town or other lights. Your pilot equally requires to know by night the direction of the wind.

Very shortly, at Croydon, we are erecting a large T, some 20 ft. long by 10 ft. broad, outlined by Neon tubes. This will show white by day and red by night. Thus, if the apparatus is successful, we hope to be able to combine a day-and-night wind-direction indicator, and a location beacon in one instrument. As I am rather responsible for it, I can but hope that it is successful. By day, the pilot can easily see the outline of the aerodrome, but by night it is necessary to have boundary marking lights every 100 yards or so around the perimeter of the aerodrome. These lights are small, flashing lights, at present gas operated, but undoubtedly in the future electrically operated, and in order to distinguish them from other lights also coloured.

The pilot has now been led to your airport, knows the outline of it, knows the direction of the wind, and is prepared to land.

To assist him in landing, one uses a floodlight, which lights up with an even distribution of light, and not in the form of beam, if not the majority of the aerodrome surface, at least enough to enable the pilot to land in safety.

There is only one thing more that he requires, and that is that all high buildings and obstructions on and surrounding the airport are illuminated by red obstruction light.

In the short time at my disposal I have endeavoured to outline the requirements regarding the surface of your airport, the barest form of equipment, and then the fuller form of equipment both for use by day and by night.

If you can prepare the surface of your airport to enable small if not large aeroplanes to land on it, and then as your traffic grows provide the necessary equipment only as and when it is required.

That is what I meant when I said that the equipment of an airport is a progressive necessity, although not directly relevant to the lay-out and equipment of airport.

There is one point which I know will interest you, and that is the matter of financial assistance towards the purchase and establishment of your airport.

Section 8 of the Air Navigation Act gives you power, with the approval of the Air Council, to establish an airport and to carry on any business in connection therewith provided that it has first been certified by the Air Council as being ancillary to the carrying on of an airport. Should you require to raise a loan for the establishment of your airport, application to the Ministry of Health will, of course, be necessary, to whom the Air Ministry will communicate their approval of the establishment of the aerodrome.

By applying to the Unemployment Grants Committee you can, under certain circumstances, obtain actual financial assistance towards the cost of laying out your airport.

In order to make what to you must seem a rather uninteresting subject less uninteresting, I will now show you a few slides of different airports in England, the Continent and America and a picture or two of the future.

There is only one point I should like to impress on you regarding these airports I am going to show and that is this.

It would be impertinence on my part to suggest that these airports are not all they might be, but when studying them one must remember that the science of aviation is progressing so fast that we should study them not so much with the idea of learning how an airport should be laid out, but rather with the idea of learning what mistakes have been made in the past with a view to avoiding them in the future.

## ADDRESS ON "SELECTION OF AIRPORT SITES"

By SIR ALAN COBHAM, K.B.E., A.F.C.

It is my privilege this afternoon to endeavour to explain to this meeting the great importance of the task of selecting a town's future airport site.

There is one great point to remember when considering the selection of the airport site, and that is that the first airport in any town should always be the best, because the promoters of the first airport have the privilege of being able to select the very best aerodrome site in the environs of the

town, and at the same time the airport that is nearest to the centre of their city.

Further to this point, I have discovered that the average town possesses just one possible aerodrome site within reasonable distance of the centre of the town; all other sites are miles too far away, and very often there are no other sites. In view of the fact that one of the greatest problems of air transport in the near future is air congestion, and that every town will have more than one airport, it is easy to see that the municipal airport would always be the most important, in so much as it would be so very superior to every auxiliary aerodrome erected in the same neighbourhood, by virtue of the fact that it was first on the scene for the selection of its site.

The selection of an aerodrome site is divided into two branches. Firstly, to know what is available, and secondly, to know exactly what is required.

The following is a brief résumé of the method of approaching the task.

The environs of a town should be completely and thoroughly "combed" so that every possible aerodrome site that exists near and far can be considered. One of the best methods of doing this in the early stages is to fly round the town—not once or twice, but a dozen or even twenty times, pin-pointing on a map every combination of fields, or woods that might lend themselves if levelled, or open spaces that could be merged to make an aerodrome. In countries where there are undulations, the approaches to such sites can be tested by low flying, and thus a preliminary survey can be made from the flying point of view.

In addition to this, a very keen study should be made on a 6-ins. Ordnance Survey Map, and an inspection of every site that can be estimated from the contours should be made. Thus, we shall have every site that can be spotted from the air inspected, and every site that can be spotted from the map investigated. When these are all marked in, a complete inspection should be made of every yard of ground that is not included in the above. Then by a system of elimination and selection, taking into account all the conditions that go to make up a good landing ground, one should be able to select the best site that exists in the district. When inspecting a site it is always advisable to make a complete inspection of the absolute limits of the land available for aerodrome development round the boundaries of a site.

First we will deal with the dimensions of an aerodrome. The Air Ministry regulation lays down that they shall not be less than 600 yards in two directions, and that for purposes of an airport the ground may not necessarily be in the form of a square so long as it provides two big runways at right angles thus making it possible to take off up and down them into the four directions of the wind.

I would like to state here that whereas under certain circumstances 600 yards might be ample room for the largest air liner to take off from, on another site 1,200 or 1,500 yards would be none too large. No hard and fast rule can be laid down regarding the size of an aerodrome. The actual acreage of an aerodrome is purely in relation to the nature of the aerodrome site and the surrounding country. Therefore, I think it is best to deal right away with the question of purchase.

Firstly, it must be understood that any obstruction on the edge of an airport nullifies the use of the landing by at the very least, 15 times the height of that object when measured along the ground. There are many regulations laid down regarding this point, but the fact remains that pilots like to clear an obstruction on the edge of an aerodrome with plenty of margin, and it will not be an exaggeration to say that some pilots would glide in at such a height over an obstruction as might even cause them to land 20 times the height of the obstruction in distance from the edge of the landing field.

While dealing with this point it will be seen how very necessary it is that when purchasing an aerodrome site, apart from purchasing the actual landing area to be used by the aeroplanes, in reality it is necessary to purchase the approach land around the aerodrome, otherwise an aerodrome might be bought to-day, and by the mere fact of buildings going up around it, the site would virtually be ruined to-morrow. Therefore, although 600 or 800 yards might be possible under certain conditions for an aerodrome site, in order to maintain that site for all times, especially in an industrial area, I would suggest that the aerodrome might even need to be 1,200 to 1,400 yards in all directions.

However, some sites are more fortunately situated in as much as they may be on a little plateau, and by virtue of this fact, it is impossible for them to be over-built by

property, factory chimneys and the like, as the land falls away on all sides and any such buildings in the vicinity would be more or less below the aerodrome site.

On the question of purchase, it must be remembered that aircraft always take off and land head into wind, and owing to the fact that the wind in most cases is a prevailing one on the average airport of the British Isles, it means that 90 per cent. of the machines are taking off and landing in practically the same direction every time. Therefore, it is essential that there should be a good approach and a good take-off into the prevailing wind. It is a bad thing to have to land over a railway line, over telegraph wires, and high tension cables are a great source of difficulty. That is why, to-day, it is so important to select an aerodrome site before high-tension cable schemes have been put up and spoilt the approach and take off to an aerodrome, or worse still ruined the whole site by running across it.

The same thing applies to wireless telegraph masts for to-day there are instances where wireless masts in the region of a town have destroyed the possibility of an aerodrome on the whole side of a town, and have limited the area safe for an aerodrome, to a very small district. Again, the question of new roadways being constructed across the only possible site, often comes up, which all goes to prove the urgent necessity of earmarking aerodrome sites in every town-planning scheme.

Further to the question of purchase, one must remember that the close proximity of hills very often ruins an aerodrome site because when the wind is blowing there is always a down current on the leeward side of a hill thus, if in the close proximity of the boundary of an aerodrome there is a hill, when the wind is blowing from that direction, it means that machines must take off over the top of this hill. The difficulty of having to climb over the hill may be bad enough, but worse still is the down current which the machine has to overcome. The same difficulty, of course, applies to a machine when landing and there is many an aerodrome site that has been spoilt owing to the close proximity of quite a small hill which has rendered such effective down currents as to make flying dangerous, when the wind has been blowing from that particular quarter.

On the question of purchasing an aerodrome site, a point to be considered is the possibility of future extension for the aerodrome. This must always be considered because aviation is a thing that is going to boom in the very near future; what may be considered a big aerodrome to-day, owing to the enormous amount of air traffic in the future will be quite a small affair in a few years' time. Therefore, if an aerodrome site is surrounded with impassable boundaries, its development and extension will always be limited. Another point to remember is that the gliding in over the tops of house property, or taking off over the houses of a town, are practices that should be shunned so that although the aerodrome site must be near into the town, such flying conditions should be avoided, and for that reason it is necessary to take up sufficient land to-day to avoid the possibility of it being built on and so prevent this flying condition occurring in the future should housing schemes or factories be proposed in the vicinity.

There are two factors with regard to the position of an aerodrome in relation to the town. Firstly, the distance from the centre of the town and the method of communication by road to the centre of the town, and, secondly, the position of the aerodrome from the meteorological point of view.

#### ADDRESS ON "TRADE BY AIR"

By LORD HERBERT SCOTT, C.M.G., D.S.O., PRESIDENT OF LONDON CHAMBER OF COMMERCE

We have heard some very convincing speeches on the subject of airports and civil aviation from the Under-Secretary of State for Air, our chairman Col. the Master of Sempill, and other gentlemen; and I am going to speak to you mostly from the Chamber of Commerce point of view.

In the United States the Chambers of Commerce take a very leading part in bringing to the notice of the local authorities the importance of acquiring suitable sites for aerodromes, and in co-operating with them in making these aerodromes a success from a business point of view.

It is certainly true of the United States, more than of any other country in the world, that business is the primary consideration, and is the paramount concern in every class or community.

Therefore, when the Chambers of Commerce in that country undertook to make the American business man "air-minded" they were, in fact, making the whole nation

"air minded," and this is what we want here in England—for the whole British nation to be "air minded."

The London Chamber of Commerce was the first in this country to realise the immense potential importance of aviation to the future commercial position of this nation and of the Empire.

It was able to bring together, for the first time, on its Civil Aviation Section, every interest concerned with things aeronautical; not only individual firms and companies, but all the organisations are represented.

The inclusion of a Civil Aviation Section in the Chamber's organisation brings it, through the Council, in close touch with some 60,000 firms.

Already a certain amount of ground has been broken up and seed planted, and I am confident that, in the not distant future, substantial harvests will be reaped.

The other leading Chambers throughout the country have also shown a keen interest and I hope soon they will be working with the London Chamber in the closest co-operation.

It may not have escaped your notice that, when the Lord Mayor of Manchester, with other city dignitaries, left for London by air to obtain the licence for the first municipally-owned aerodrome in England, they were cheered on their way and wished God-speed by representatives of the Manchester Chamber of Commerce, who were present in the aerodrome.

The Lord Mayor of Manchester, being a busy public man, saved a large amount of time by flying to London and back, apart from setting a very fine practical example of aviation.

I should like to touch on the great future for seaplanes.

In olden days we gradually built up from very little the great British Mercantile Marine of to-day, and I feel convinced that the British-built seaplane in its variety of shape and form will gain for us a world-wide reputation in years to come and be the means of linking up our great Colonies and Dominions, apart from Continental and other usages.

This is an example of how important it is to create air sea-ports as well as air inland ports, if we wish to progress with civil aviation.

H.R.H. The Prince of Wales, one of the most wonderful advocates of anything good for our nation's benefit we have ever had, has given us a splendid lead in the advantages of flying—and the Prime Minister, Mr. Ramsay MacDonald, has only been second to H.R.H. In his example of using air transport.

Don't let these splendid examples be wasted, but let us all get busy and show the world we mean business.

I believe we have the finest designers and constructors of aircraft in the world and our air pilots are second to none, but their efforts are of little use if we have not available inland and sea airports which are the life blood of this enterprise.

I submit that corporations who fail to get their aerodromes in readiness will be failing in their national duty.

#### SIR CHARLES WAKEFIELD'S AIRPORT CONFERENCE BANQUET

FOLLOWING the conference at the Institution of Electrical Engineers on "The Necessity for Municipal Airports," a banquet was given at the Savoy by Sir Charles Wakefield to the mayors and municipal officials who had attended the conference. Some 250 were guests of Sir Charles, and considerable enthusiasm was evinced during the evening for the hospitality shown and the value of the meeting held during the afternoon.

The only lady present was the Mayor elect of Hereford, Mrs. Councillor Luard, M.B.E., who much enjoyed the uniqueness of her position under the circumstances.

Sir Charles Wakefield occupied the Chair, and following the loyal toast, he, in a few words, proposed the principal toast of the evening, "Municipal Airports of Great Britain." He referred to the conference as likely to make a turning point in the history of aviation. It had created a good and sound foundation for future progress. The great advance in the views of municipalities in this connection had come through the foresight of one man—Sir Alan Cobham. As a result of his work, many of our citizens, young and old, had become flying enthusiasts. They were, however, very grateful to the high officers of the State who that evening were supporting them in their objects. He also welcomed Sir Eric Geddes, who had played so great a part in the building up of our air forces.

Lord Thomson of Cardington, Secretary of State for Air, in responding, expressed his great satisfaction at being present upon so unique an occasion. He doubted whether any other form of transport could have assembled so many of our municipal leaders in one gathering, they coming from every part of the United Kingdom. The question arose,

What had brought together this unique assembly? There had always been a great civic pride amongst our people, and more particularly as between municipal authorities. This pride, however it applied to local progress, was always sunk when national interests came into the question. He, personally, would do everything in his power to foster municipal airports. He wished that every municipal city should have its airport; and why only one? He could see the time when every self-respecting city would have as many airports as railway stations, and moreover, he hoped in many cases more efficient in their services and more accessible. Aerodromes were an essential part of any modern city; without them these cities were likely to be left behind. Regarding national interests, it was difficult to exaggerate the importance of aviation to Britain, as representing the British Empire and its far-flung dominions. It must be obvious, he said, that the development at home of this great movement must reach right out to the extremities of our dominions. Thanks, he continued, to the generosity of Sir Charles Wakefield and the enterprise of Sir Alan Cobham, the organisation of the Royal Aeronautical Society and the Air League of the British Empire, they had had to-day this great conference followed by the present great banquet. It was for those who had participated therein to go forth and help create that air-mindedness which he hoped they themselves now had. As representatives of a great people and many great cities, they could teach their flock and thus help, by that duty, towards spreading aviation.

Sir Eric Geddes, Chairman of Imperial Airways, who also replied, affirmed that aviation could not exist without airports. It required in this country airports and still more airports. In short distances it was necessary to have airports at frequent intervals and easy of access. Upon longer routes it was not so necessary. There was thus an extraordinary contrast between long routes and internal flying in this country. It was entirely a matter of airports. His own company had refused business over and over again by want of those facilities, and he foresaw in the future there would be two distinct categories; the well-equipped aerodrome for the long-distance routes, in which the situation would probably be away from the great centres, and a category for short distance flying, in which case these must be situated centrally near the business quarters. In this connection, we were inclined to look for Government help in these matters. The Air Ministry had thus so far taken civil aviation to a certain extent under its wing. It had done all it could for the time being, but he hoped they would do still more. It was, however, also up to the municipalities to do their share. He was an air enthusiast, he hoped of the sane order, but he was also a business man. Croydon was excellent for long distance flights. It was, however, too difficult of access for general taxi or private plane business flights between London and the provinces. There were only four municipal airports in this country. In Germany there were 80, and in America 1,500, of which 300 were equipped for night landing. In his travels, he saw in every country business men were using the air for travel except here. That was because of the absence of airports. As the towns grew, the cost of acquiring these would be greater. Therefore he advocated it best to get a good airport now than a bad one later on at a greater cost. He had put the price of the cost of an airport at less than the cost of one mile of arterial road. The town that had no airport would presently be left behind. According to official statistics, 1,820 square miles of land in Great Britain were employed by roads and railways, and yet to put aerodromes of reasonable size every 20 miles throughout the length and breadth of Great Britain would occupy only 130 square miles of land. The afternoon Conference and this dinner he thought should be good propaganda for the great cause of aviation; and Sir Charles Wakefield, for his support in this connection, and Sir Alan Cobham for his great efforts in the air throughout the country, should be greatly applauded. As soon as airport facilities were provided he foresaw the support of business houses springing up to support them. The past development was only a foretaste of what would eventuate in the next ten years. He therefore wholeheartedly supported the work of Sir Charles Wakefield, as without aviation this country must inevitably fall behind.

Colonel the Master of Sempill then proposed the toast of "British Air Transport." He thought that November 5, this great day, might well be re-named as the "Sir Charles Wakefield Day," as it was the day when the Conference had started out demanding a fulfilment of our great want, "airports and still more airports," a better slogan than that of Guy Fawkes Day. The work done by Sir Eric Geddes and the Imperial Airways, he hoped, would be further expanded.

Routes by air were more easily organised than any other mode of transport. In a few years it was inevitable we should have air routes open throughout the Empire, whilst long-contemplated railways would still be under discussion.

Lieut.-Col. Lord Herbert Scott, President of the London Chamber of Commerce, in responding, congratulated Sir Alan Cobham on the splendid work he had done throughout the country. The only thing to convince the British public of the advantages of flying was by practical demonstration, and that is what Sir Alan had done. The wonderful advance of motor development throughout the world should be a warning to the world of what would be likely to happen in the air. He saw no reason why air transport should not eclipse even motor transport. We were the common carriers of the world and the builders of the world's railways, and he hoped to see us quickly the leaders in the air. Air transport must come, and we must look ahead in that direction and capture the world's work. Let us demonstrate to the public that air transport was quicker and as reliable as the railway and much safer than the roads with their streams of motor cars.

Sir Alan Cobham, seconding the response, appealing to the Mayors of the country and making a special point by adding the importance to the movement of the Town Clerks and Surveyors of the various boroughs then present, said that he had had the pleasure of taking many, if not most, of the guests that evening into the air for the first time during his great tour. He need hardly say how precious his loads therefore were. In one town a man said when he had the Mayor, Town Clerk, Surveyor, and other important officials of the town as his passengers, "For heaven's sake drop 'em all out" (a humorous sentiment which appeared to be much appreciated by his listeners). What was the idea of these airports? It was impossible to fly until we had airports to land upon. Why municipal airports? If left to private enterprise it probably meant a long wait. Airports were, and should be, a municipal enterprise, and a natural harbour to a town, like a seaport to a seaside town.

With a string of municipal airports there could never be a stranglehold likely to result from a combination of airports under private enterprise. These must be in every town, and then the full utility of flying would be available for the use of everybody. He should strongly advise it to be taken in hand at once. It would then be cheaper than it could possibly be, should the municipal authorities wait. On the return to their cities, they should at once organise an aerodrome committee to look into this matter.

Let there be as many aerodromes in this country as there were golf clubs, and he thought they would then be satisfied. In conclusion he tendered his thanks to Sir Charles Wakefield, who enabled him to go ahead so magnificently with his scheme.

Sir Charles Wakefield then gave the toast of "The Guests," the Lord Mayor of Hull responding. The latter thanked Sir Charles for his great support during their recent Civic Week. There was no one, he said, in the British nation who had done so much privately for the forwarding of aviation. The day had gone by when the nation could afford to treat aviation as a hobby or as an amusement. The town in the near future which had no aerodrome would be relegated to the limbo of obscurity. The speaker then referred to Sir Alan's work in detail, and, continuing, said when the history of aviation came to be written, two names would stand out prominently, although not the only ones, those of Sir Charles Wakefield and Sir Alan Cobham. He hoped each of the Mayors there that night would see, upon their return to their towns, that an aviation committee, as had been suggested, was brought into being without delay, and thus help to make aviation an easy and possible proposal.

Sir Herbert Hambling, in also responding, said he had never seen so many gold chains gathered together at one function in his life. In looking back at the great strides aviation had made, he thought the wonderful work done by the pioneers was fully appreciated. These, to a large extent, had been due largely to, and made possible by, the generosity of their Chairman, who had given with a generous hand in every direction.

The final toast of "The Chairman" was given by Sir Philip Sassoon, who said that no words were needed from him to commend Sir Charles to them. He was the "Patron Saint of Aviation." He had done more privately than any other man in this country in spreading the cult, and he had succeeded thereby in interesting every section of the British public in aviation.

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The Mayors of the various cities who were bidden to the Conference and the banquet were as follows:—

Aylesbury—The Mayor of, George Cannon, Esq., J.P.; Deputy Mayor, Councillor Viscount Stopford, O.B.E. Barnsley—The Mayor of, J. F. Broby, Esq. Basingstoke—The Mayor of, Alderman Frank Stratford. Battersea—The Mayor of, Alderman Joseph Edwards, J.P. Bethnal Green—The Mayor of, Alderman Wesley Chandle, J.P. Bexhill-on-Sea—The Mayor of, Bideford—The Mayor of, H. W. Fulford, Esq. Bridlington—The Mayor of, Alderman C. H. Gray, J.P. Brighton—The Mayor of, Alderman H. J. Galliers, J.P. Burton-on-Trent—The Mayor of, William H. Giles, Esq. Camberwell—The Mayor of, Alderman A. G. Harvey, J.P. Canterbury—The Mayor of, Captain W. Vansittart Howard, R.N., D.S.O. Chatham—The Mayor of, Osborn Taylor, Esq. Chelsea—The Mayor of, Alderman C. P. Clapcott, O.B.E. Cheltenham—The Mayor of, Charles H. Margrett, Esq., C.B.E., J.P. Conway—The Mayor of, L. Chetwynd Atkinson, Esq. Crewe—The Mayor of, W. C. White, Esq. Doncaster—The Mayor of, R. H. Hepworth, Esq. Dorchester—The Mayor of, E. W. Tilley, Esq. Dunstable—The Mayor of, Percy W. Lockhart, Esq. Finsbury—The Mayor of, Alderman C. J. Sabourin, J.P. Folkestone—The Mayor of, Albert Castle, Esq. Gillingham—The Mayor of, Councillor Allen S. J. Treacher, J.P. Gloucester—The Deputy Mayor of, Councillor J. W. Barnett. Hackney—The Mayor of, Alderman W. R. Power, Hammersmith—The Mayor of, Alderman B. J. Samels, J.P., L.C.C. Hampstead—The Mayor of, Alderman W. C. Northcott. Harrogate—The Mayor-Elect of, Alderman Richard Annakin, J.P. Harwich—The Mayor of, Alderman E. Saunders, M.B.E., J.P. Hereford—The Mayor-Elect of, Mrs. Councillor Luard, M.B.E. High Wycombe—The Mayor of, Alderman A. Stacey. Holborn—The Mayor of, Alderman A. J. Clark, J.P. Hull—The Mayor of, Councillor Benno Pearlman, J.P. Huntingdon—The Mayor of, Frank Clark, Esq. Hythe—The Mayor of, Brig.-Gen. G. Cunningham, C.B., C.B.E., D.S.O. Islington—The Mayor of, Alderman S. C. Harper, J.P. The Royal Borough of Kensington—The Mayor of, Alderman Henry Robinson, M.A., M.D., J.P. Lambeth—The Mayor of, Alderman G. E. King. Lewisham—The Mayor of, Councillor J. T. Hallinan. London County Council, Chairman of, Lord Monk Bretton, C.B. Lowestoft—The Mayor of, Arthur Evans, Esq., J.P., C.C. Ludlow—The Mayor of, Jno. Palmer, Esq. Margate—The Mayor of, Newport, Mon.—The Mayor of, Councillor Walter T. Griffiths, J.P. Norwich—The Lord Mayor of, Herbert P. Gowen, Esq., J.P. Nottingham—The Lord Mayor of, Alderman A. R. Atkey, J.P. Oxford—

The Mayor of, G. F. Button, Esq. Paddington—The Mayor of, Alderman Leonard T. Snell. Plymouth—The Mayor of, Ambrose Andrews, Esq. Poplar—The Mayor of, Alderman Charles W. Key. Preston—The Mayor of, W. Lucas, Esq. Ramsgate—The Mayor of, Rochester—The Mayor of, F. C. A. Matthews, Esq. Salisbury—The Mayor of, Alfred Salisbury Jones, Esq. Scarborough—The Mayor of, Abraham Moore, Esq. Shoreditch—The Mayor of, Alderman G. Reynolds, J.P. Southampton—The Mayor of, M. H. Pugh, Esq. South Shields—The Mayor of, Alderman James Dunlop, J.P. Southwark—The Mayor of, Alderman T. E. Hewitt. Stafford—The Mayor of, William T. Richardson, Esq. St. Albans—The Mayor of, William S. Green, Esq., J.P., C.C. Stepney—The Mayor of, Alderman D. Frankel, J.P. Stirling—The Provost of, Daniel Barker, Esq. Stoke Newington—The Mayor of, Alderman F. A. Dod. Stoke-on-Trent—The Lord Mayor of, Alderman William T. Leason. St. Pancras—The Mayor of, Alderman E. J. Saunders. Swansea—The Mayor of, T. J. Richards, Esq. Taunton—The Mayor of, L. Checkley Barker, Esq. Walsall—The Mayor of, Ernest H. Ingram, Esq. Wandsworth—The Mayor of, Lt.-Col. G. F. Doland, O.B.E. Westminster—The Mayor of, Major Vivian B. Rogers, D.S.O., M.C., J.P. Weymouth—The Mayor of, Percy Boyle, Esq., M.B.E., J.P. Wolverhampton—The Mayor of, Albert T. Wood, Esq. Woolwich—The Mayor of, Alderman R. P. Purcell. Worcester—The Mayor of, Lt.-Col. Albert Webb, V.D. Worthing—The Mayor of, Alderman W. T. Frost. Yeovil—The Mayor of, S. C. Clothier, Esq.

Amongst other guests present were:—

Mr. F. G. L. Bertram, C.B.E., Deputy Director of Civil Aviation, Sqdn.-Commr. J. Bird, Capt. N. W. G. Blackburn, Messrs. R. Blackburn, M. L. Bramson, L. S. M. Braund, K. A. Bruce, Capt. Malcolm Campbell, Lieut.-Col. M. O. Darby, Lieut.-Col. J. Edwards, Messrs. C. R. Fairey, H. P. Folland, Maj. H. Hemming, Mr. H. P. Henry, Sqdn.-Ldr. E. L. Johnston, Capt. A. G. Lamplugh, Messrs. John Lord, W. Lockwood Marsh, Lieut.-Col. Sir F. K. McClean, Capt. I. McClure, Maj. W. G. McMinnies, Maj. R. H. S. Mealing, Dr. G. Merton, Lieut.-Col. J. M. Moncrieff, Lieut.-Col. J. T. C. Moore-Brabazon, Messrs. H. N. St. V. Norman, H. A. Pepper, Commander H. E. Perrin, Capt. J. L. Pritchard, Maj. L. S. Richard, Sqdn.-Ldr. C. A. Ridley, Air Chief Marshal Sir John M. Salmond, Maj. Sir Henry Segrave, Messrs. J. D. Siddeley, A. F. Sidgreaves, O. E. Simmonds, Lieut.-Col. H. G. Thwaites, Mr. H. T. Vane, Sir Elliott Verdon-Roe, Air Vice-Marshal Sir V. Vyvyan, Capt. C. E. Ward, Mr. Humphrey, G. E. Woods, Col. Warwick Wright, etc.

## "PUNCH" ALMANACK

As usual *Punch* Almanack is profusely illustrated, both in colour and black-and-white. It is composed largely of pictures relating to winter sports, Christmas festivities and the like, all Mr. Punch's artists in their turn being represented.

H. M. Bateman provides two characteristic pages. Lewis Baumer is responsible for a series of eight pictures in which a jaded City man is transported—of course, *via* the air—from his office at mid-day to the Schneehorn for an afternoon's skiing and back to London by tea-time.

A feature entitled "Dramatic Possibilities: The Labour Party's Shakespeare Troupe," by Sir Bernard Partridge, is grotesquely clever; whilst humour is at its best throughout this big number, even including the beautiful centre double page in colour by Frank Reynolds of "Christmas in Soho." Dancing is cleverly roped in, "The couple who didn't realise it was an exhibition dance," and "The fortunes of the Ballroom," being delightfully suggestive.

The literary portion of the Almanack is mainly represented by contributions from "Evoc" and "A. P. H."

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## New Air Mail Leaflet

THE Postmaster-General announces that a new edition of the Air Mail Leaflet, giving particulars of the winter services, is now available. It contains two maps, showing the principal Continental and Overseas Air Services used, and also an inset with a map and details of the direct service to India. Apart from the usual temporary suspension of certain services during the winter, the most important alteration shown in the leaflet is the reduction, as from November 4, of the air fees for countries served by the England-India Air Mail Service. These air fees, which are additional to the ordinary postage charges (given in brackets), will be as follows:—Egypt and Palestine, 2d. per ½ oz. (1½d. first oz., then 1d. per oz.); Iraq, 3½d. per ½ oz. (2½d. first oz., then 1½d. per oz.); Persia (including Gulf ports), 5d. per ½ oz. (2½d. first oz., then 1½d. per oz.); India, 5d. per ½ oz. (1½d. first oz., then 1d. per oz.). Correspondence for Persia can now secure accelerated delivery in Persia by air services from Baghdad to Tehran, and from Bushire to Shiraz and Isfahan. The air fee of 5d. per ½ oz., in addition to ordinary foreign postage covers transmissions by the England-India air route to Baghdad or Bushire as the case may be, and thence by air into Persia. Correspondence sent by the England-India air route prepaid at the full Indian rate can now overtake the ordinary mail for Australia, New Zealand and the Far East despatched from London on the previous Thursday evening. The leaflet also shows:—Alteration (as from November 4) of the air fee for the United States, Cuba, etc. (air transmission by the United States lines) to 4d. per ½ oz. New service to Central and South America (New York-Miami-Havana-

Belize-Tela-Managua-Cristobal-Guayaquil-Trujillo-Callao-Mollendo. Copies of the new leaflet may be obtained free of charge from any Post Office.

## S.M.A.E. Visit to Croydon

A PARTY of members of the Society of Model Aeronautical Engineers and of the Model Aircraft Club, visited, at the very kind invitation of Mr. Marcel Desoutter, the Desoutter Aircraft Works at Croydon, on Saturday, October 26. The visit was arranged by the S.M.A.E. and was the first of a series which it is hoped to make during the coming months. The party left Victoria at 2.18 and arrived at Croydon Aerodrome at 3 o'clock, where they at once put themselves in the hands of the representatives of the Desoutter Aircraft Company and were shown machines in all stages of construction. After leaving the Desoutter Company's works, a tour was made of the air-port, under the direction of an Air Ministry guide. The afternoon finished with tea at the Aerodrome Hotel, where Mr. Balston, Chairman of the S.M.A.E., was able to announce that the Desoutter Aircraft Company had very generously offered a prize of £2 2s. for a competition to be held during 1930 for models of the machine which had been seen that afternoon.

## Big Order for Canadian Vickers Aircraft

CANADIAN VICKERS, LIMITED, has received from the Dominion Department of National Defence an order for the delivery of thirteen Vickers "Vedette" machines. This is stated to be the largest single contract for aircraft received by a Canadian manufacturing concern. Three of these aeroplanes are to be used in the training of Royal Canadian Air Force pilots, and the other ten are three-seater flying-boats specially designed for forestry patrol, sketching, light transportation and photography in connection with work carried on under the Department of Civil Air Operations in the northern portions of Manitoba, Saskatchewan and Alberta, where a very large area of photographic mapping has been carried out in recent years. Three of the aeroplanes are scheduled for delivery in the fall and the balance after the opening of navigation on the St. Lawrence River in the spring. The company named has already built and delivered approximately 50 machines of this type, specially adapted to Canadian flying conditions. The majority of these were ordered by the Canadian Government, though recently six were despatched to Chile for Government service there. The first contract of the company for the construction of aircraft was received six years ago from the Dominion Government, one condition being that the machines should be manufactured in Canada. Canadian-Vickers, Limited, therefore, established an aircraft branch at their Montreal factory, with the necessary equipment for the construction of aeroplanes and flying-boats. Further contracts were obtained in 1924 from the Government and commercial operating companies, and the plant was expanded by the addition of a design department to undertake the development of special types to suit Canadian conditions.

# PRIVATE FLYING AND CLUB NEWS

## LADY BAILEY LECTURES ON HER TOUR TO CAPETOWN AND BACK

A TREAT was provided to Yeovilians on Friday, October 25, through the medium of the Westland Aircraft Society, the Yeovil Branch of the Royal Aeronautical Society, when the Hon. Lady Bailey delivered an extremely interesting lecture on the subject of her flight to Capetown and back.

The chair was taken by Colonel the Master of Sempill, A.F.C., A.F.R., who was introduced by Alderman P. J. Petter, ex-Mayor of Yeovil.

Introducing the lecturer, Colonel Sempill spoke of his great pleasure in coming to Yeovil, and he wished to thank Mr. Petter for the kind remarks which he had made referring to his contact with the Westland Aircraft Works.

He said they would all admire the courage and pertinacity of Lady Bailey in traversing darkest Africa in her Moth.

Lady Bailey, who was greeted with applause, said she felt it an honour to be asked to this gathering, and said that as she was not used to lecturing, the audience would please excuse any shortcomings. She said that she had made a long trip in a long time. At the outset she had no definite idea of returning by a different route to the one used on the way out, the route chosen for the return journey was really the result of the authorities insisting on an escort when crossing the Sudan.

Her Moth aeroplane was fitted with a Cirrus II engine, and an extra petrol tank of a capacity of 25 gallons was fitted in the front seat. She carried a few spares, and an extra oil tank was fitted. At the start she encountered bad weather, crossing from London, via Paris, to Naples. After that better weather was experienced, and she crossed via Messina and Malta to the North African coast, along which she flew passing through Homs and Bengazi. The scenery along this portion of the trip she found very beautiful; the wonderful colourings combined with the blue Mediterranean to make a very pretty picture. The route then lay from Alexandria to Cairo, where a certain amount of delay incurred owing to the British Authorities refusing to allow her to cross the Sudan without an escort. They were extremely anxious about her making the flight unaccompanied and although Lady Bailey had but few clothes in her baggage for a protracted stay, she was forced to remain in Cairo for seven days. Finally, the *Johannesburg Star* newspaper telegraphed to Lieut. Bentley, one of the pilots who had taken part in the South African flight to England, and asked him to break his journey and travel back with her in order that she might have an escort across the Sudan. Lady Bailey was then able to continue her flight, the route lying through Luxor and Asyut, where on landing Lady Bailey was mistaken for Lady Heath, who was at that time also flying in Egypt. Lady Bailey had not previously visited Egypt and found the scenery was of very great interest. She followed the Nile to Assuan, and then on to Wadi Halfa, when she struck the railway and followed this down to Khartoum. On the way she was forced to make a landing in the desert owing to engine trouble, and she descended in a dried-up river bed, fortunately without any damage, although the ground was very rocky. The trouble was apparently due chiefly to her having put too much oil in the engine at her last stop, and everything was covered with oil. The magneto was also very dirty, and for some reason or other her instruments had gone wrong. However, after cleaning the magneto and plugs she was able to proceed without further trouble. At Khartoum she met Mr. and Mrs. Bentley and Lady Heath, and four days were spent in resting and being entertained. Although it was very hot when she left Cairo, she found it hotter still at Khartoum. Particularly interesting was a large private Zoo in which the animals appeared to be particularly tame, and visitors actually went into the cages. Lady Bailey told an amusing incident of a lion who was said to have jumped the bars of his cage and tried to eat the giraffe. The keeper demanded his instant return, whereupon the lion promptly did as he was told and returned to his cage.

Incidentally the bars of the said cage had not been heightened since this incident, and the local inhabitants are living in expectation of a further escapade.

Then, accompanied by Lieut. Bentley, Lady Bailey once more proceeded on her journey and after the second day's flying reached Mongalla, where Lieut. Bentley turned back. The change in the scenery had been very marked, the yellow sand of the desert giving way to shrub and bush, and finally to very lovely country indeed around the great lakes, surrounded as they are by mountains covered with dense vegetation. Lady Bailey did not proceed to Nairobi, but kept to the south by the edge of the lake until she encountered the railway, which she followed to Tabora. She arrived at the landing ground during the hottest part of the day; the altitude is some 5,000 ft., and in the rarefied atmosphere consequent on these conditions a faster landing than usual is necessary in order to avoid stalling. Not being fully aware of these facts Lady Bailey attempted to land too slowly, the air was very bumpy and striking an air pocket she had the misfortune to crash her machine, which turned over, fortunately without injury to herself. She naturally felt very disappointed in not being able to continue her flight in the same machine in which she had started. After some nine days' delay, however, she was able to proceed on a new Moth which was flown up from Johannesburg by an officer of the South African Air Force. En route for Johannesburg to Tabora he had flown from Pretoria to Broken Hill in one day, an exceptionally good flight, which incidentally indicated the time which could be saved with a properly organised flight route to the Cape. During her stay at Tabora, Lady Bailey witnessed the arrival of the Royal Air Force flight to S. Africa. Lady Bailey's route then lay through Abercorn, through very lovely country; the lake (Tanganyika) was completely hidden by the mountains till she was almost upon it. The country was covered with forests of small trees, but the districts appeared to be very cut off for the want of roads of any sort and transport on the surface would be a very slow process. She then proceeded across Northern Rhodesia to Broken Hill, passed Lake Bangweolo and the wide marsh adjoining the lake, where she had doubts as to her petrol supply lasting out till she had crossed both lake and marsh, but fortunately found she was able to leave the lake shortly after she touched its southern extremities and her fears proved unnecessary. From Broken Hill she was able to follow the railway to Livingstone on the river Zambesi, by the world-famed Victoria Falls. She was actually unable to see very much of the Falls themselves on account of the spray which was thrown up to an immense height. The river gorge with its hairpin bends and dense vegetation forms a wonderful panorama. At Livingstone she must have arrived appearing very dirty and dishevelled, and on meeting her friends she felt badly the need of rest; she was informed that the annual banquet was to be held and she was to be a guest of honour. After a rest and bath her appearance had evidently undergone a considerable change as her friends greeted her a second time on seeing her. From Livingstone she proceeded by following the straight railway line on a somewhat monotonous part of the journey to Bulawayo. The air was bumpy, so bumpy in fact that soon after leaving, her petrol funnel which was evidently not fastened down was bumped out of the plane, but this fortunately landed on open ground without hurting anybody. The last stage of the journey lay through Pretoria, Bloemfontein, Beaufort West, and so on to Capetown. When endeavouring to make a straight course across the mountains she climbed as high as was possible until the machine lost its ground speed; when flying forward the machine would not climb, and she could therefore do nothing but follow the valleys and find a way round the highest ground. At Capetown a dense fog seemed to cover everything, and Lady Bailey was just wondering how best to find her whereabouts when Table Mountain appeared through the mist and formed an unmistakable

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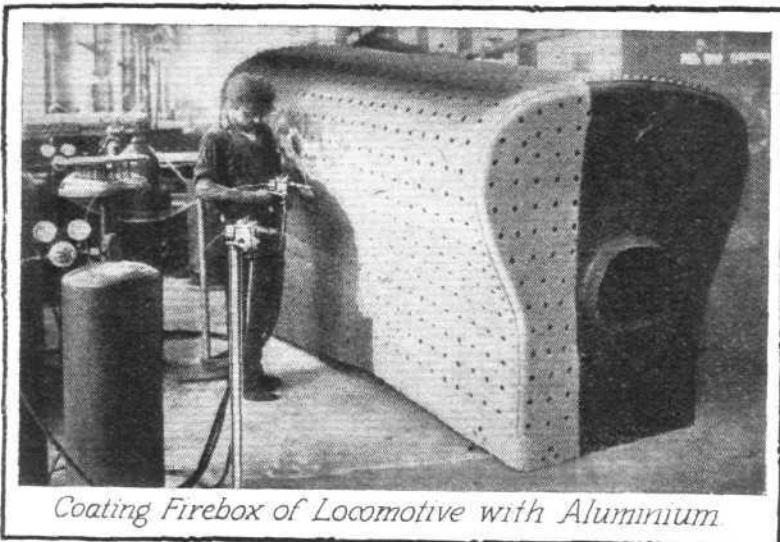
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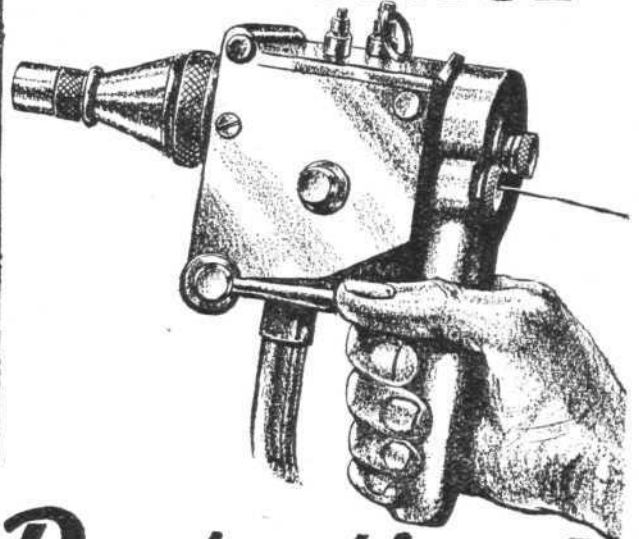
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| Winchester Repeating Arms Co., U.S.A.             | British Electric Federation.             | Wolsley Motors.                     | Chrysler Corporation, U.S.A.                               | Flower City Ornamental Iron Co., U.S.A.        | Harland & Wolff.  |
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| Aluminium Company of America, U.S.A.              | India Rubber Gutta Percha Co.            | Opel, Germany.                      | Mining Division, Admiralty.                                | Mander & Co., Wolverhampton.                   | Richardson, Ltd.  |
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| Robinson, Peter, Salford.                         | Thornycroft, J. I., & Co.                | Ohio Brass Co., U.S.A.              | Rheinische-Stahlwerke, Hilden.                             | Southern Railway.                              | Stewarts & Lloyds.                                      |
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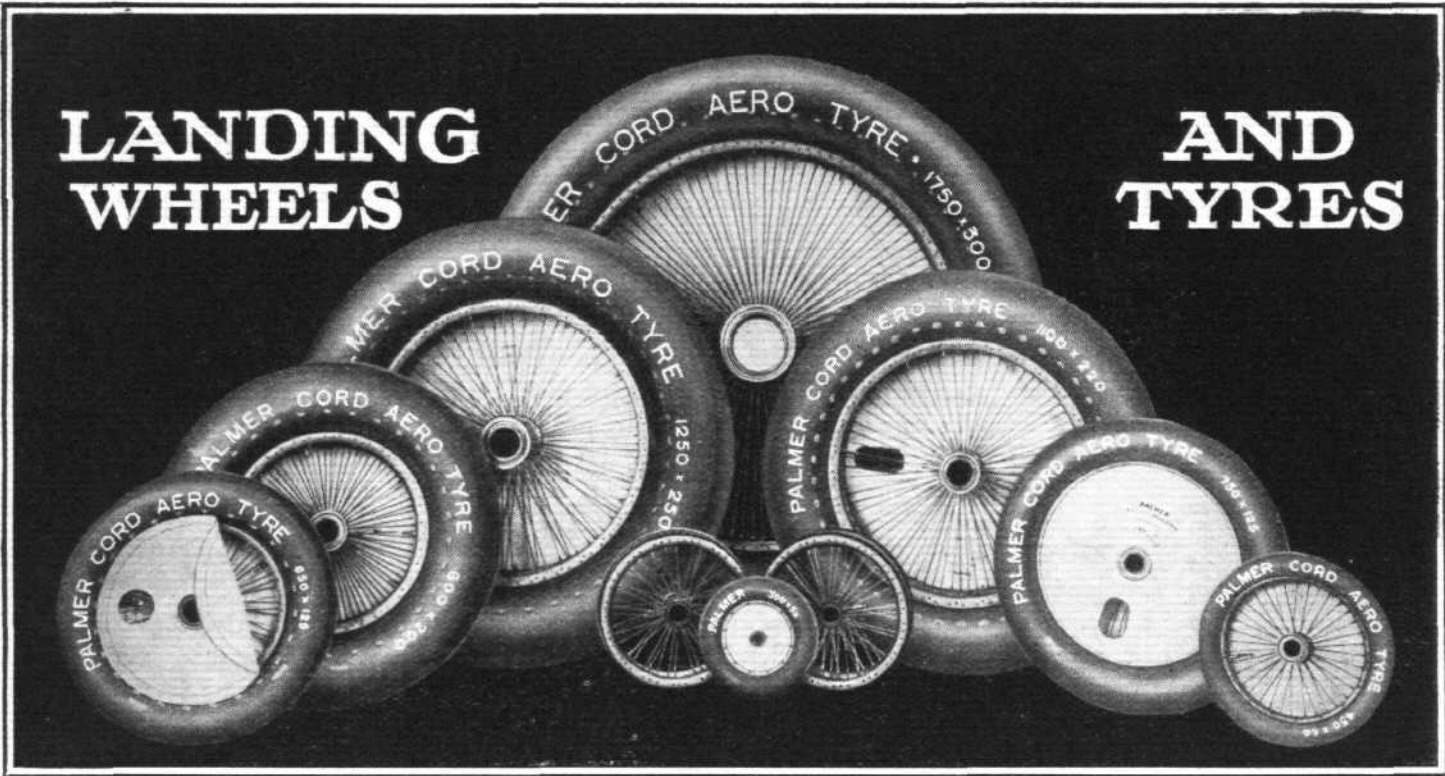
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		Length	Bore				Length	Bore				Length	Bore	
375×55	168	m/m	25.4	m/m	700×100	176	m/m	44.45	m/m	1000×180	148	m/m	m/m	m/m
"	195	111.12	38.09	Central	"	179	178	55	Central	"	149	220	80	Central
300×60	16	111.12	25.4	Central	"	179	178	55	Central	"	155	185	55	Central
450×60	30	89	31.75	Central	650×125	119	178	55	Central	"	166	220	66.67	Central
"	172	130	38.09	Central	"	147	178	55	Central	900×200	107	185	55	Central
575×60	21	160	28	Central	"	188	120	34.92	Central	"	108	185	55	Central
"	180	150	38.09	Central	"	336	178	44.45	Central	"	128	220	66.67	Central
"	186	120	34.92	Central	750×125	77	178	44.45	Central	"	137	250	80	Central
"	190	150	38.09	Central	"	92	185	55	Central	"	157	185	80	Central
600×75	21	160	28	Central	"	95	185	55	Central	"	202	185	60.32	Central
"	180	150	38.09	Central	"	99	178	38.89	Central	1100×220	134	220	66.67	Central
"	186	120	34.92	Central	"	112	150	38.09	Central	"	136	250	80	Central
"	190	150	38.09	Central	"	176	178	44.45	Central	975×225	192	185	60.32	Central
700×75	78	178	44.45	132/46	"	179	178	55	Central	"	194	185	55	Central
"	79	178	44.45	Central	800×150	161*	185	55	Central	1100×250	364	220	60.32	Central
"	100	178	38.09	Central	"	162*	185	55	Central	1250×250	314	250	80	Central
"	101	178	31.75	Central	"	163*	185	66.67	Central	"	154	304.8	101.6	Central
"	196	178	55	Central	"	169†	185	55	Central	1500×300	305	304.8	152.4	Central
600×100	188	120	34.92	Central	"	177	185	55	Central	"	306	304.8	101.6	Central
"	304	150	38.09	Central	"	183	185	55	Central	1525×325	197	304.8	101.6	Central
"	333	120	34.92	Central	"	211*	185	60.32	Central	1750×300	139	400	152.4	Central
700×100	77	178	44.45	132/46	1000×150	167	185	55	Central	"	191	350	150.3	Central
"	92	185	55	135/50	"	174	250	80	Central	1750×350	193	400	125	Central
"	95	185	55	Central	"	182	185	55	Central	2000×450	363	500	152.4	Central
"	99	178	38.89	132/46	"	187	220	66.67	Central					
"	112	150	38.09	Central	"	201	185	60.32	Central					
					"	210	185	60.32	Central					

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landmark. She landed on April 30, 1928, at Capetown, where her husband, Sir Abe Bailey, awaited her.

In planning the return trip, she first telegraphed regarding the route, and was informed that under no circumstances would she be permitted to return over the Sudan without an escort. She therefore decided to proceed by an alternative route. On the way out her petrol and oil supplies had been laid down by the Shell Company, but on the return journey she had not this valuable assistance. After spending the summer in South Africa, and making a number of local flights, she was able to obtain permission from the S.A.B.E.N.A., the Belgian Air Transport Company, to cross the Belgian Congo. She started on September 21, and proceeded via Pretoria, Bulawayo, Salisbury, to Broken Hill. Near Salisbury, she was able to see big game moving in the trees, but was unable to descend low enough to distinguish what animals they might be. As she went north, the country got wilder, and the roads ceased. Veldt fires were observed, in some cases covering the whole sides of mountains. Haze covered most of the country, and visibility was poor. She was glad to reach lower country and get back to better visibility, and to find the railway as guide. She had no maps of the route she proposed to follow and this return journey was considerably more hazardous than the outward journey, which had at least been prepared to the extent of petrol and oil dumps being provided, etc., whereas, on the return, little was known of the route, and a considerable portion of the journey lay over foreign territory.

Lady Bailey then proceed by Elizabethville to Kinshasa. The country was again very pretty, with farms dotted here and there. She found the air route marked by circles and followed the road until dense forest appeared and no roads were visible. River transport was the only form of surface transport possible in this country, and the method employed for reaching Kinshasa from the mouth of the Congo. The next stage was to Coquilhatville, a town situated at the junction of five rivers, and where all the trees were actually growing in water. Here was a most wonderful botanical garden, and the whole atmosphere steamy.

Everywhere was water, and even the aerodrome was provided with a raised road on which to land. Flying on to Fort Archambault via Bangui, the climate underwent yet another noted change, and the first cattle, horses and dogs were noticeable.

Lady Bailey was very interested to note here a remarkable race of native giants, averaging about 7 ft. in height. This portion of the journey was over French territory and Fort Lamy was the next stop. Proceeding more westward, Kano was reached, and here the only available landing place appeared to be the village street. On flying lower, the natives rushed out to see the strange visitor, and Lady Bailey dared not land. The second time, however, the natives cleared, and a successful landing was made. It appeared that a Mr. Carpenter, a "Moth" owner, was living at Kano, and the natives thought that Lady Bailey's machine was his, and could not understand why it did not land as usual. Mr. Carpenter appeared and explained matters, and was able to lend his assistance to Lady Bailey. Lady Bailey was kept waiting a considerable time while the King arrayed himself in his state robes and drove up in an old Ford car, a distance of about 20 yards from his house. Great excitement ensued, and much interest was shown in the aeroplane. There were six policemen, arrayed in turbans and robes, who attempted to keep the crowd in order with the aid of large whips, much to the general amusement.

Proceeding through Northern Nigeria to Sokoto, Lady Bailey was met by the Sultan of Sokoto, who was accompanied by a retinue of Arab horsemen with ornamented

saddles and flowing robes. Then on to Niamey, on the Niger and Goa, but missing Timbuctoo on the north, Lady Bailey finally reached Dakar, in French territory. She had made enquiries as to the possibility of crossing the Sahara region in a more direct route, but there were no arrangements for petrol dumps, and it was therefore necessary to go the more round-about route following the coast and the already established French Air Line.

En route for Dakar, at Mopti, the floods of the Niger were encountered; here, large stretches of the country were inundated, and Lady Bailey remarked that it was impossible to map this district as the country was different every year. In landing at a native village, Lady Bailey did not notice a telegraph line until too late, and in clearing this made a heavy landing and bent the axle of her "Moth." The natives were at first rather scared, and hid behind the bushes, but on perceiving that it was a woman, became very friendly, and one who spoke a little French was able to direct her to the next village, some 18 km. distant. She was able to reach this by horse, and found there a Post Office and a car. Returning to where she had left her plane, she found that the chief had had the machine carefully guarded, and she was able to get the axle put right. As a mark of appreciation of the kindness of the chief, she wished to give him a present, and gave him some material for making a dress. The chief was highly delighted, and in return insisted on returning the compliment, and handed her two chickens and six eggs. These gifts were somewhat embarrassing, but the chickens were stowed in the locker along with the tools, and on arrival at Mopti appeared none the worse for their cramped journey.

The French Air Line runs day and night services from Dakar along the coast to Europe, and Lady Bailey remarked on the fact that at many of the places along the route there was nothing except the Fort in which the local personnel was housed, and the aerodrome itself, in the midst of the desert, with a few rocks here and there. The route crosses Spanish territory, which is not policed, and all supplies reach the coast towns by boat. From Agadir, the country is flat, and Morocco itself appeared to be one large, natural aerodrome. The remainder of the route was through Malaga, Alicante, Barcelona and Bordeaux, to London.

Comparing the return with the outward journey, Lady Bailey remarked on the similarity of the climate and configuration of the landscape on the east and on the west at similar latitudes—the sand of Egypt matching those of the Sahara, the dense vegetation of the territory around the lakes corresponding with that on the Congo, and so on.

Following this vivid description of the route itself, Lady Bailey showed a series of slides illustrating the country through which she had passed. A few of these were taken by herself, and others showed the machine landing at various points.

Great applause greeted the end of the lecture, and Colonel Sempill, before calling for a vote of thanks, asked whether any members of the audience would like to ask a question. Flight-Lieut. Paget asked Lady Bailey whether she had any idea of the actual mileage flown. Lady Bailey replied that she had not taken a definite account of her mileage, but it lay somewhere between 15,000 and 18,000 miles, not including local flights in South Africa.

His Worship the Mayor of Yeovil, Alderman Clothier, was then asked to move a vote of thanks. He congratulated the Westland Aircraft Society on their having given the townspeople of Yeovil the chance of hearing Lady Bailey, and he wished Lady Bailey to accept a sincere and hearty vote of thanks for coming to Yeovil and giving her extremely interesting account of her experiences.

COMPLAINTS have been received from members of the Automobile Association concerning the high housing fees for private aircraft in force at Matyasfold, the air port of Budapest.

In deference to representations made by the Automobile Association, these charges have now been reduced for aircraft other than those plying for hire and reward.

The housing fees for a light aeroplane are approximately as follows:—Period of 12 hours, and unfolded, 3s. 9d.; and folded, 1s. 2d. Period of 24 hours, and unfolded, 7s. 2d.; and folded, 2s. 4d.

Certificates are required to the effect that aircraft is privately owned, and not engaged in commercial flying. These certificates can be obtained from the Aviation Department of the Automobile Association, Fanum House, New Coventry Street, London, W.1.

THE R.A.C. has decided to extend the benefits of its "Get you Home" service to members and associate-members of the club whilst flying. The service has hitherto provided a relief car free of charge for the use of members who may have broken down on the road. A considerable number of R.A.C. members are now either owners of light aeroplanes or are members of flying clubs. Should any of them, whilst flying, be compelled to make a forced landing, they can send for an R.A.C. relief car to convey them to the nearest railway station or other convenient point.

If the plane is of the folding wing type that can be towed on a public road, and it is possible to move it from the spot where it has landed to the highway without the use of special tackle, the R.A.C. is prepared to pay for its conveyance to any town within the limits of the scheme.

# AIRISMS FROM THE FOUR WINDS

## "Land of the Soviets"

THE Russian aeroplane *Land of the Soviets* has completed its 12,000-mile flight from Moscow to New York via Siberia and Alaska, which started on August 23. It landed at 4.13 p.m. on November 1, at Curtiss Field, where a crowd of about 5,000 had assembled to greet it. Unfortunately, a dozen or more persons were injured when the machine landed, and were taken to hospital. This flight has lasted 48 days, of which 20 were employed in carrying out repairs and changing the engine; the flying time was 167 hours. The airmen have approached the Soviet Government for permission to continue the flight to Europe.

## German Long-Distance Air Mails

THE Deutsche-Lufthansa has decided to develop long-distance air mail services as it has been found that at the present stage of air transport the carrying of mails is more profitable than carrying passengers or freight. An experimental flight in this connection was recently carried out when three Lufthansa pilots, von Schroder, Eickenhoff and Albrecht, left Berlin in an Arado monoplane (500 h.p. B.M.W. "Hornet"), and after a flight of 11 hrs., landed about 30 miles from Constantinople. On October 29, they left Constantinople at 3 a.m. on the return trip and reached Berlin at 1 p.m.

## Australian Air Mail Adventure

ON October 29, an East to West mail 'plane, carrying 13 passengers, bound from Kalgoolie (W.A.), for Adelaide, met with strong head winds. Running short of fuel in consequence, the pilot made a forced, but successful, landing in the dark on the Nullarbor Plains. After tapping the overland telegraph line for help, a rail motor truck was despatched from Forrest with food, and later the truck returned to Forrest with two women passengers, the other passengers spending the night in the machine. In the morning the latter was refuelled and proceeded to Forrest aerodrome where the two women passengers were picked up. It reached Adelaide 4½ hrs. late.

## Blizzard Holds up U.S. Air Liner

A WESTERN Air Express air liner encountered a violent blizzard whilst on its way from Los Angeles to Kansas City on October 28, and was "lost." Search aeroplanes were sent out, but were forced back. The missing machine eventually turned up, 30 hrs. later, at Albuquerque; apparently it had made a forced landing on the edge of a lava bed in a desolate volcanic region 70 miles from Gallup.

## Gloster-Napier 6 in Lord Mayor's Show

THE Gloster-Napier 6 Schneider Trophy machine on which Flt./Lieut. Stainforth attained a speed of 336 m.p.h., will figure in the Lord Mayor's Show on Saturday.

## More "Calcuttas" for Imperial Airways

As a result of the satisfactory performance obtained with the Short "Calcutta" flying-boats operated over the Mediterranean section of the London-India air service by Imperial Airways, the latter company has placed an order for a fourth machine of this type.

## Municipal Airport for Vancouver

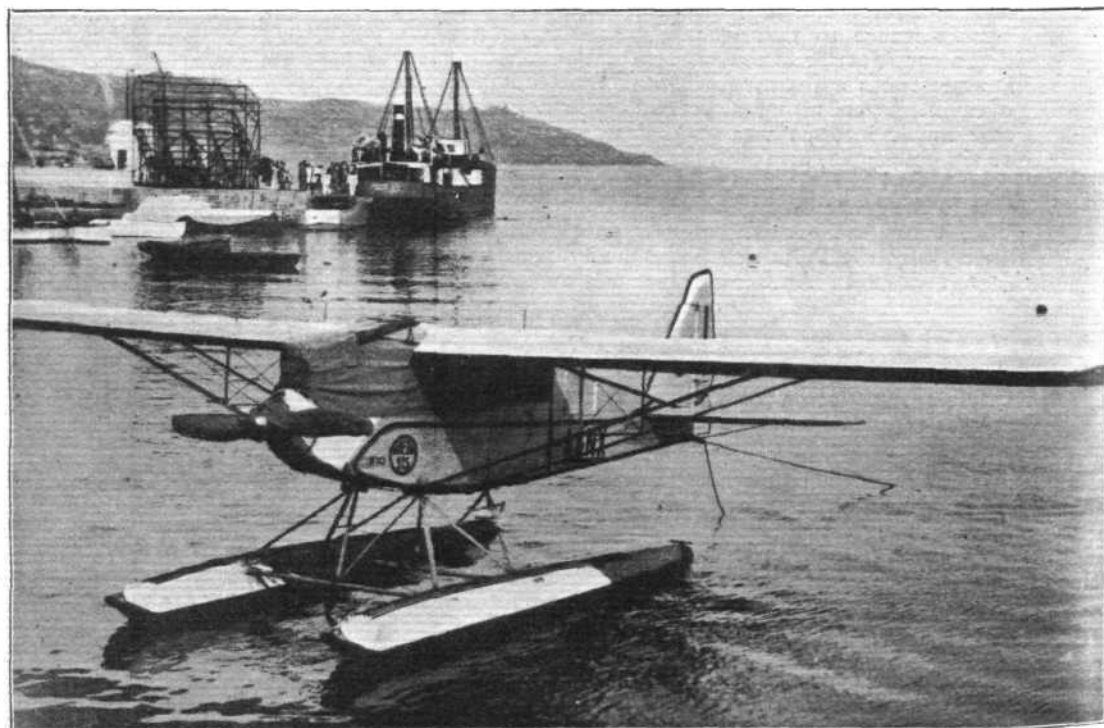
THE Civic Airport Committee of Vancouver has secured options for the purchase of 459 acres of land on Sea Island, at the mouth of the Fraser River. This site consists of level land stated to be suitable for use by both land and sea planes. The price of the property is approximately \$251,300. The Chairman of the Committee is recommending the City Council to vote \$200,000, subject to confirmation by the ratepayers, the sum named to be devoted to the establishment of an airport on the site. Only about one-half of the property will be required immediately for the service of the airport, the remaining land being leased to industries associated with aviation. There will be ample space for runways east and west, and north and south, each about a mile in length. The land is dyked, and the river at this point is practically a harbour protected by two small islands.

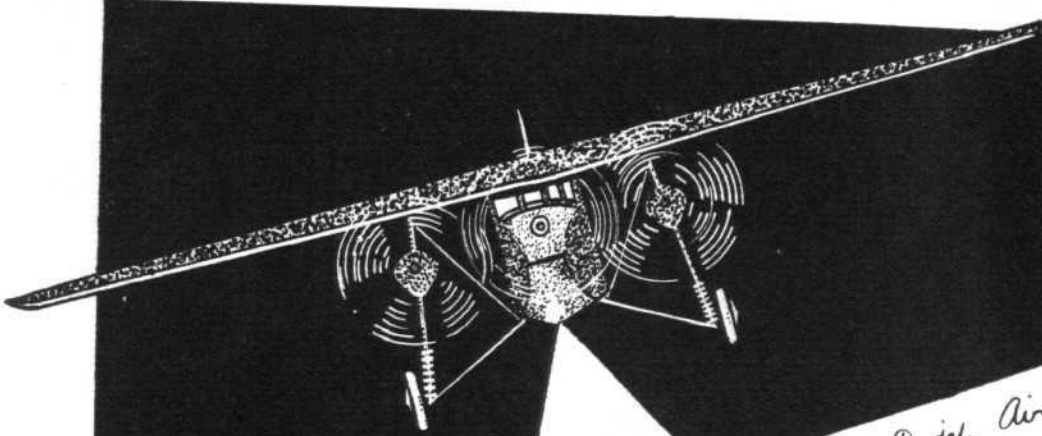
## The Air Ministry and the Schneider Trophy Contest

THE Air Ministry announces:—The Government have had under review the future policy in regard to the Schneider Trophy Contest in 1931 and subsequent years. After careful consideration, it has been decided that a Royal Air Force team will not again be entered, thus leaving British participation to private enterprise under the auspices of the Royal Aero Club. Two main considerations influenced this decision:—

(1) That, owing to Government participation in recent years, the contest has assumed a character not in accordance with the intentions of M. Jacques Schneider, its originator and the donor of the Trophy. (2) That, although the entry of a Royal Air Force team was calculated to give a much-needed impetus to the development of high-speed aircraft—and did so notably in the two latest contests—sufficient data have now been collected for practical development in this direction, and the large expenditure of public money involved by Government participation is, therefore, no longer justifiable. This decision should not, of course, affect the entry of British machines in future contests. Convincing proof has now been furnished of what the British aircraft industry can do, and the wide public interest displayed should make it possible for our pilots and machines to compete in what is intended to be a sporting international event on a basis of private enterprise.

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## OXFORD UNIVERSITY AIR SQUADRON

"I CONGRATULATE the University authorities on their vision, for a very venerable University is assisting something very new," said Lord Thomson, Air Minister, when opening the new lecture hall of the Oxford University Air Squadron, on Saturday, November 2. Oxford was somewhat slower than Cambridge in recognizing that undergraduates must have a natural desire to fly, and ought to be allowed to fly. But any hesitation which there may have been has now been amply atoned for. The opening of a new lecture hall, and that not a very great addition to the architectural beauties of the City of Spire, is not in itself an event of outstanding importance. But so important is the progress and welfare of this newest feature of Oxford activities considered, that the Air Minister went down in person to declare the hall open, and the ceremony was attended by the Vice-Chancellor, Dr. F. Homes Dudden (Master of Pembroke), the Senior Proctor, Mr. Buxton, several other heads of colleges, and a host of professors. What is more, though the civic authorities seldom take an active interest in the doings of the University as such, the presence of an air squadron in the ancient city is evidently a matter of pride to all, and so the Mayor, Councillor J. T. Button, and the Corporation, in the full glory of their robes, and headed by the mace, also attended the ceremony. At least one eminent member of Cambridge University was present, General Smuts, who is now in Oxford to deliver a series of Rhodes Memorial Lectures. Air Marshal Sir Edward Ellington, Commanding-in-Chief, the Air Defences of Great Britain, represented the high authorities of the Royal Air Force. The guests were received by Wing-Commander A. G. R. Garrod, M.C., D.F.C., M.A. (Oxon), and Mrs. Garrod, who were assisted by Flight-Lieuts. Williamson and T. B. Bruce, M.C. As the Vice-Chancellor was present all resident members of the University, including the Wing Commander, wore their gowns.

The lecture hall has for long been badly needed by the squadron, which has hitherto had to perform all its activities, other than flying, in one hangar. The new hall adjoins that hangar, and in addition to its main purpose, it will provide a social centre for the squadron. Part of it will be used as a club room and part as a mess. The latter part had been functioning for a few days before the formal opening, and one member of the squadron, who was wearing a scholar's gown, remarked that he had lunch there regularly, as it was both cheap and good. There are many places in Oxford where one can get a good lunch, fewer where one can get a cheap good one; so this testimony was a useful one. To make a success of any movement in Oxford—at any rate, a

movement which does not demand a capital M—a social side is a *sine qua non*, and as the 75 members of the air squadron come from some 20 different colleges, it is most important for them to have a common room where they can get to know each other well in term time.

Lord Thomson, in declaring the hall open, said that the squadron had been founded in 1925 for three objects. The first was to spread an interest in flying in the University; the second was to enlist the services of the University in aeronautical research; and the third was to induce a number of members to apply for commissions in the Air Force. As regards the first, the results could hardly have been better. Of the 75 members, 74 had attended the camp last summer, and of these 64 had qualified to fly solo. He paid a tribute to Wing Commander Raikes who had founded the squadron, and he thanked the Territorial Association and other bodies which had helped the squadron. As regards research, he hoped that more would be done in the future than was done at present. As regards the third object, it was very desirable that the service should obtain officers from Oxford. A service pilot must be a very exceptional man, in brain and in physique, and the universities could provide that type.

Next the Air Minister thanked the University authorities for the help which they had given to the squadron. He said it had been a dream of his boyhood to go to Oxford, but fate had willed that he should go into the army. He knew the power of the University authorities, and was aware that without their help none of the objects of the squadron could have been achieved. Then he mentioned General Smuts, recalling that he had once gone on a tour of Central Europe in his company. It was General Smuts who was the first to foresee the possibilities of an independent air force, and it was he who had coined the paradoxical phrase "*the terra incognita of the air*." General Smuts was a combination of a philosopher and a man of action. That was the type of man the service wanted to get from Oxford.

After the ceremony, I had some conversation with General Smuts, though it was not in the nature of an interview. He said, quite seriously, that he wished that he were young enough to learn to fly himself. He enjoyed travelling by air. On the sea he was a bad sailor, but he was always comfortable in an aeroplane. He said that these were critical and very interesting days, and that one of the great needs was to annihilate time and space. I mentioned R.101. "Ah," he said, "what great hopes hang upon her success."

F. A. DE V. R.

## ROYAL AERO CLUB.

Official Notices

### AIR TOURING TO EGYPT

AIR tourists contemplating flights to Egypt are reminded that they should, in the first instance, apply to the Air Ministry, who will take the necessary action to secure from the appropriate Department permission for flights to Egypt. Application should *not* be made direct to the Egyptian authorities.

### FLIGHTS TO KENYA COLONY

The Aero Club of East Africa, Nairobi, notify pilots proceeding to Nairobi that the aerodrome there is usually full of grazing game, which are liable to become a danger to aircraft landing there. The Aero Club of East Africa is prepared to arrange for the game to be driven off upon receipt of a wire notifying type of aircraft and proposed date and hour of arrival. At least three hours' clear notice should be given.

Offices:—The Royal Aero Club, 3, Clifford Street, London, W.1. H. E. Perrin, Secretary.

### DE HAVILLAND NEWS

#### The Moth in Use by Commercial Travellers

BUSINESS houses are waking up to the advantages of providing their travellers with light aeroplanes, and a good example was seen at the Hull Air Pageant. Capt. N. W. R. Mawle, D.F.C., sales manager for the Imperial Typewriter Co., wished to attend the Hull meeting, but had unavoidable business on the same day. Leaving Leicester early in the morning in a Gipsy Moth he made several business calls before arriving at Hull in time for the opening ceremony. He told the Press that the cost of his journey was less than it would have been by rail and taxis, independent of the amount of time saved.

#### The Moth and the "Inverted Loop"

THE Moth Aircraft Corporation of Lowell, Mass., U.S.A., has forwarded a copy of a most interesting letter from Mr. Garland E. Peed, junr., of the Curtiss Flying Service, Louisville, Kentucky, U.S.A. This gentleman has made a practice of performing the "inverted loop" on standard American-built Gipsy Moths. He says: "Some were made with a dive from normal flight and the stick pushed steadily forward until back to normal flight again, and others with a dive to gain speed, a half-roll to inverted flight, and an inverted climb to normal flight, finishing with a short dive to inverted flight again. This covers both methods of making this manoeuvre. In addition, I have made the complete series of inverted aerobatics, including the inverted spin and roll. I believe this to be the first strictly commercial airplane in every respect to complete this manoeuvre. . . . In every case these aerobatics were made before a number of competent observers, and can very easily be certified."

This is the first ship under 200 h.p. and under 1,600 lbs. to do an outside loop in U.S." It may be remembered that the Moth was the first aircraft in Great Britain to perform the "inverted loop," the aerobatic manoeuvre which probably stresses a machine more than any other evolution yet known. This was done for the first time publicly at the Hendon Air Pageant, 1928, and the pilot was Flying Officer Atcherley, of this year's victorious Schneider Cup team. The Moth Aircraft Corporation evidently turns out a fine ship.

#### New Indian Flying Club

WE hear on the authority of our Indian representative that a new flying club is in process of being formed at Lahore, and that this will be equipped with Gipsy Moths. This brings the total number of flying clubs in India up to six, the others being Delhi, Calcutta, Bombay, Karachi, Allahabad, all of whom operate already on Gipsy Moths.

# CORRESPONDENCE

## AN ARABIAN NIGHT AIRSHIP

[2213] That mythology should have invented aeroplane flight when it made Daedalus fit his son Ecarius with wings is not to my mind such a striking invention as is instanced in the "Arabian Nights" when Simurg was converted into an airship. After all, with birds about one it was no great invention to think of fitting wings, but I cannot comprehend what fertile imagination invented Simurg.

The story runs—Prince Diamond wished to reach the far city of Wakak to obtain his heart's desire, Gamila. He was put into touch with a gigantic jinn or ilfrit who, he was told, would transport him by air and after the necessary negotiations he sat himself astride the giant's shoulders.

The translation of the story continues as follows:—

"Here is a giant larger than an elephant and yet he pretends that he will fly with me in the air without the use of wings—'As Allah lives, it is a prodigy, an unheard of thing.' But even as he thus reflected, a noise as of wind passing through the chink of a door and he saw the giant's belly swell and swell until it became as large as a dome. The noise of wind grew into the noise of bellows as the giant distended. Suddenly the Simurg beat the earth with its feet and a moment later was floating above the garden. He moved his legs in the air as a frog swims in water, until he came to a height which pleased him; then he went forward in a straight line towards the West.

"Whenever he found that the wind lifted him too high, he would release air in varying amounts, and when, by this perdition, his belly sagged, he took in fresh air through mouth and nose and ears. After seven days of this aerial flight they found themselves . . . The Simurg let out air and floated down until he could gently set Prince Diamond on the terrace."

London, E.C.2.

October 30, 1929.

ALEXANDER DUCKHAM.

## A CROYDON CRITICISM

[2214] I have read with great surprise the letter of your correspondent "J. P. C." (2212) in the November 1 issue of FLIGHT, as my own experience of Croydon officialism was really delightful.

My friend and I decided to have a look at Croydon whilst staying in London in June, and we arrived at the aerodrome about 4 p.m. on a Wednesday.

I saw the "shilling" enclosure and I thought that it would be a rather foolish thing to pay such a sum for that "pleasure" (?), and we accordingly wandered further up the road.

We merely happened to stroll into the booking hall of the port and immediately we had got our feet on the inside

of the hall one of the officials came up to us and asked us could he be of any assistance to us. I replied that I should like to get a good view of the 'drome and I received the astonishing reply that if I cared I could go up the steps behind the weather chart on to the roof. Without asking at all, the official in question told me that 'planes would be in at such and such a time, (which happened to be in about 5 minutes and about every 5 minutes for some time) and I would get a good view of these 'planes from the Control Tower. We accordingly went upstairs and we had a most pleasant half-hour "airing."

When we got down into the hall afterwards, another official asked us if we had enjoyed ourselves, and would, I am convinced, have given us any help necessary.

We had a most enjoyable time at the air-port and I intended writing the officials at the aerodrome thanking them for their kind assistance, but my letter was never written as I forgot to write it (one always does forget to thank the people who are kindest), but in view of your correspondent's assertions, I must write disclaiming anything wrong at Croydon.

Your correspondent must have been most unfortunate for I assure you that the people at Croydon are amongst the best-tempered in the world, and personally, I have nothing but praise and thanks for them.—Yours faithfully, although someone most plain,

GEOFFREY BEACH.

Brownhill, Blackburn, November 1, 1929.

[2215] I feel I cannot let your correspondent's letter go unanswered, *re* Air Port at Croydon, as I have visited this extremely interesting 'drome at week-ends quite a lot during the last few months with friends, in order to get them air-minded as your correspondent suggests, and can assure you we have always come away with a happy souvenir. The teas provided have been enjoyed, especially when taken on the terrace overlooking the 'drome, where much can be seen without moving from one's tea, the staff have always been attentive and helpful. Regarding the small charge for a timetable—if required—surely this is usual at any railway station. The whole point which seems to have escaped your correspondent's afternoon visit, and the most important of all, is the interesting tour of inspection afforded to visitors by the courtesy of Imperial Airways, who loan their guides and show one everything of interest at the air port including visiting the sheds of the other foreign air lines, and this, sir, free of charge, and if one should be sufficiently interested, there is a very useful little book giving the history, etc., of the air port, at a nominal charge of 6d. Candidly, your correspondent should revisit Croydon one fine day and when in better spirits!

HAROLD SOLOMON.

Bromdesbury, London, N.W. November 3, 1929.



British Enterprise Abroad: This Fairey IIF (type F.A.A.) was recently flown (as a land machine) to Greece by C. R. McMullin, and was then converted into a seaplane. In both forms it favourably impressed the Greek authorities who made a thorough inspection of the machine. It is seen just outside the island of Hydra, with the summer Palace of the Greek President in the background.

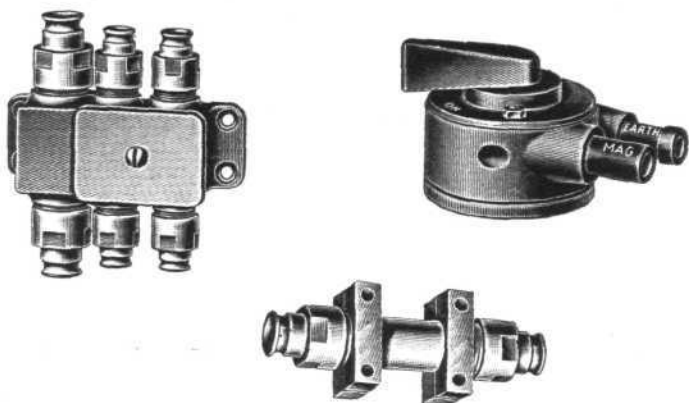
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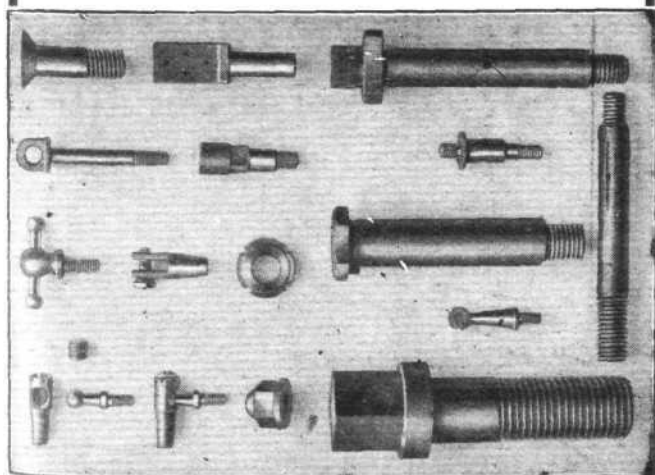
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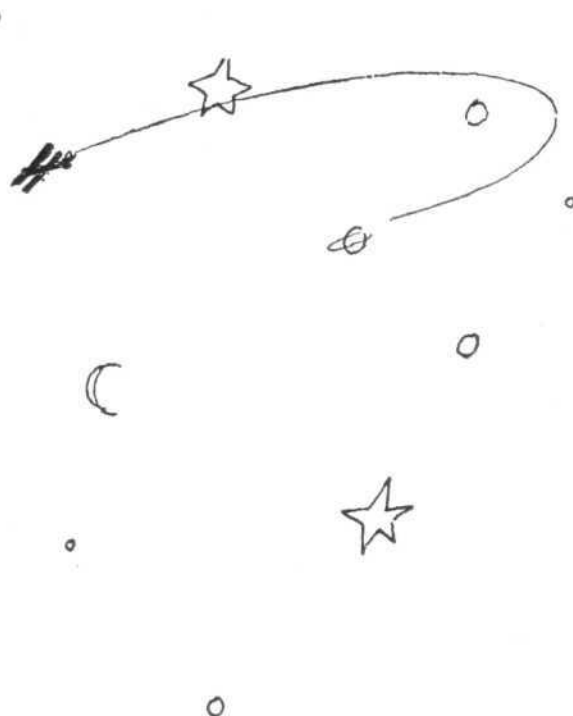


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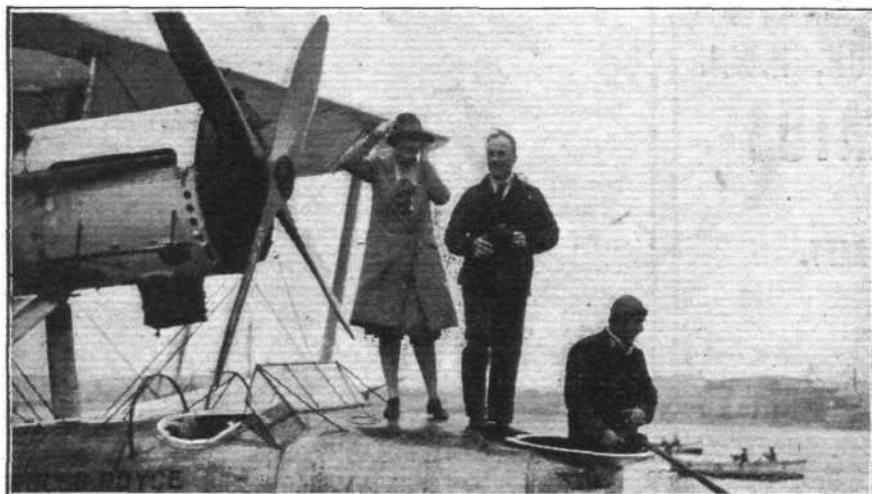
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20th September, 1929.

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You will observe that the windscreen, which  
is of your manufacture, is intact. The rear door, which  
is no longer visible, was fitted with ordinary plate glass.

The driver and myself were sitting in the front  
of the 36/200 hp. MERCEDES, and our passenger at the rear.  
When the impact came between the two cars, the driver and I  
were thrown with considerable violence against the front  
screen, which fortunately held, not a fraction of the glass  
falling. This undoubtedly saved the life of both of us, and  
lessened our injuries, which were bad enough, to an overwhelm-  
ing extent.

Our Passenger at the back was unfortunately badly  
cut by the ordinary plate glass in the rear window, and he has  
been in the doctor's hands ever since.

If the publishing of this letter is any good to  
your firm you have my Company's permission to do so; it may  
impress upon owners of cars, especially speed cars, like the  
MERCEDES, that it is essential to fit Triplex and in some cases  
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Yours faithfully,  
for GORDON WATNEY & CO., LTD.,  
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Hugh F. Calvert-Jones  
Capt. R.A.F.

**ESAVIAN**

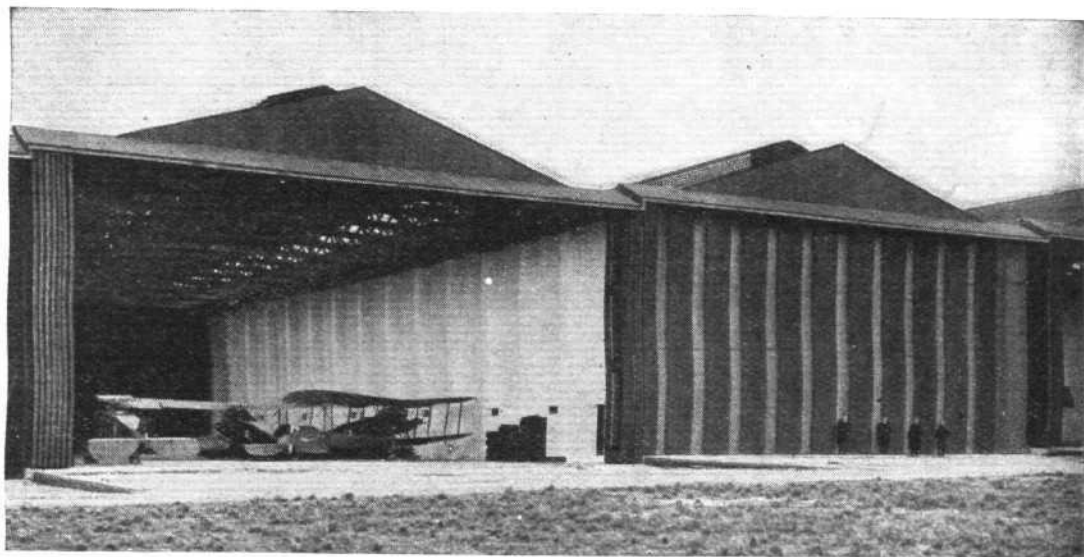
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# THE ROYAL AIR FORCE

London Gazette, October 29, 1929

## General Duties Branch

J. A. H. Loudon is reinstated as a Pilot Officer with effect from Oct. 17, and with seniority of July 30, 1928. The follg. Pilot Officers are promoted to rank of Flying Officer:—J. S. Pole (Sept. 16); H. P. Wilson (Oct. 2); H. D. McGregor, W. H. Jones, F. R. Jones (Oct. 13); C. G. Davies (Oct. 18) (with seniority of Oct. 13). Flight Lt. B. D. S. Tuke is placed on retired list (Oct. 28); Lt. S. C. Woolley, R.M., Flying Officer, R.A.F., relinquishes his temp. commn. on return to Corps duty (June 15). (Substituted for Gazette June 25); Group Capt. E. F. Briggs, D.S.O., O.B.E., is placed on half-pay list, scale A. (Oct. 25).

## Medical Branch

J. G. Skeet is granted a temp. commn. as a Flight Lt. with effect from and with seniority of Oct. 14; Flying Officer J. J. MacAndrews, M.B., resigns his short service commn. (Oct. 23); Flying Officer H. D. Humphreys is promoted to rank of Flight Lt. (Dental) on promotion to rank of Captain in Army Dental Corps (Jan. 27).

## Chaplains Branch

The Rev. C. A. Smith is granted a short service commn. as a Chaplain (Roman Catholic) with the relative rank of Squadron Leader (Oct. 18).

## RESERVE OF AIR FORCE OFFICERS

### General Duties Branch

The follg. Pilot Officers are promoted to rank of Flying Officer:—J. M. Gittins (Oct. 23); G. H. Theyenard (Oct. 24); G. M. Randall (Oct. 25).

The follg. Flying Officers are transferred from Class A to Class C:—G. P. W. Chandler (Aug. 22); J. V. Holman (May 1); R. K. Coupland (Oct. 29); A. N. Francombe (Oct. 11). Flying Officer F. V. Gauntlett relinquishes his commn. on completion of service (Oct. 29). The commissions of the follg. Pilot Officers on probation are terminated on cessation of duty:—J. K. Watson (Sept. 24); P. A. Jessel (Aug. 22); E. M. Wright (Aug. 22).

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the R.A.F. are notified:—  
*General Duties Branch.*

*Squadron Leader* A. McR. Moffatt, to No. 23 Group H.Q., Grantham, 2.10.29.

*Flight Lieutenants:* J. L. Wingate, to Armament and Gunnery Sch., Eastchurch, 23.9.29. G. Combe, to Armament & Gunnery Sch., Eastchurch, 23.9.29. D. R. W. Thompson, N. 10 Group H.Q., Lee-on-Solent, 27.10.29. V. S. Parker, D.F.C., to No. 22 Sqn., Martlesham Heath, 27.10.29. H. V. Pendavis, D.S.O., to Home Aircraft Depot, Henlow, 1.10.29.

*Flying Officers:* H. F. Luck, to Royal Airship Works, Cardington, 2.9.29. G. E. G. Lywood, to Station H.Q., Mount Batten, 26.10.29. T. O'N. East, to Elect. & Wireless Sch., Cranwell 29.9.29.

*Pilot Officers:* R. P. Garnons-Williams, to No. 25 Sqn., Hawkinge, instead of to No. 23 Sqn., Kenley, as previously notified, 3.10.29. P. B. Rogers, to No. 23 Sqn., Kenley, instead of to No. 25 Sqn., Hawkinge, as previously notified, 3.10.29. D. H. F. Barnett, to No. 5 Flying Training Sch., Sealand, on appointment to a permanent commn., 5.10.29. J. A. H. Loudon, to No. 24 Sqn., Northolt, 17.10.29. J. S. Tanner, to No. 2 Flying Training School, Digby, 23.9.29. The undermentioned Pilot Officers are all posted to R.A.F. Depot, Uxbridge on appointment to short service commns. with effect from 11.10.29:—C. F. G. Adye, C. P. F. Alderson, I. O. Baldwin, J. N. Baxter, N. V. Bertram, B. W. E. R. Bonsey, M. Q. Candler, W. O. J. Coke, V. A. Dawson, C. C. M. Duman, F. P. R. Dunworth, N. Foster-

Packer, H. M. Gahan, F. B. H. Hayward, T. E. Dunville, N. Hill, M. V. Johnstone, N. D. Lamb, G. W. Lawson, D. McGregor-Cheers, L. E. P. Mahon, D. E. Milson, W. S. Moody, P. E. L. A. Myers, R. W. H. Rayneau, E. G. Reed, P. A. Smith, J. F. Sutton, C. H. Williams, S. M. Worrall.

### Accountant Branch.

*Flight Lieutenant* J. J. Caiger, to No. 1 Flying Training Sch., Netheravon 11.10.29.

### Medical Branch.

*Squadron Leader (Dental):* R. H. Bebb, O.B.E., to H.Q., Iraq Command, 8.10.29.

*Flight Lieutenants:* E. C. K. H. Foreman, to Station H.Q., Bircham Newton, 13.11.29. C. W. Coffey, to Station H.Q., Biggin Hill, 30.10.29. J. G. Skeet, to Central Med. Establ., 14.10.29. F. W. Goodread (Quarter-Master), to No. 1 Stores Depot, Kidbrooke, 8.10.29.

*Flying Officers:* G. H. J. Williams, to No. 3 Flying Training Sch., Grantham, 3.10.29. T. A. Edwards, M.B., to Station H.Q., Hornchurch, 5.11.29. N. M. Jerram, to R.A.F. Pathological Lab., Halton, 6.11.29.

### Chaplains Branch

Rev. G. H. Piercy, M.A., to No. 203 Sqn., Iraq, 8.10.29. Rev. A. W. Brown, M.A., B.D., to Station H.Q., Heliopolis, 1.9.29. The Rev. D. F. Blackburn, to R.A.F. Depot, Uxbridge, 8.7.29, instead of to H.Q., R.A.F., Cranwell, as previously notified.

## IN PARLIAMENT

### Aerodromes and Flying Clubs and Assistance

THE UNDER-SECRETARY OF STATE FOR AIR (MR. MONTAGUE), on October 29, in reply to Mr. Louis Smith, said that grants have been made, in certain cases by the Unemployment Grants Committee in connection with work on municipal aerodromes. As regards the encouragement of flying clubs, some of the subsidised clubs have decided to become affiliated to the National Flying Services, Ltd., and will thus benefit from the grants made to that organisation when they cease to be eligible for the existing subsidy. It is hoped that others will be self-supporting by the time that their present agreements with the Air Ministry terminate.

### Air Services

On October 30, in reply to Lieut.-Commr. Kenworthy, regarding a regular air-mail line between Cairo and the Cape of Good Hope, and extending the Indian air-mail route to Singapore and Australia, Mr. Montague said the Cape proposals have now been agreed in principle with the various Governments concerned, and a survey party, consisting of representatives of Imperial Airways, Ltd., and an Air Ministry official, have left this country for Cape Town for the purpose of visiting the countries on the route and settling details of ground organisation in consultation with local officials. As regards the England-India air service, proposals for its early extension from Karachi to Calcutta are now under consideration by the Government of India, and estimates for the further extension of the services to Singapore and Australia are being examined. The service half way from Alexandria will be in operation by June of 1930, and the rest within six months of that date, or the very latest by April 1, 1931.

### Civil Aviation in India

MR. BENN on November 4, in reply to Maj. Pole, said up to March of this year the Government of India had expended about £240,000 on civil aviation. Of this, £30,000 was a contribution to the Imperial airship scheme, and the rest was mainly spent on ground organisation. A further sum of about £180,000 has been provided in the current year's estimates, which includes about £26,000 as a contribution to the cost of the proposed Karachi-Delhi service. About £28,000 will have been contributed to light aeroplane clubs during the two years ending next March.

The details are:—The expenditure of the Government of India on civil aviation (excluding the cost of provision of wireless and meteorological facilities) during the last five years is as follows: 1925-26, £9,150; 1926-27, £97,970; 1927-28, £76,250; 1928-29 (revised estimate), £39,300; 1929-30 (Budget estimate), £178,050. Total, £400,720.

### R.A.F. War Memorial Ceremony

On Sunday next (November 10) Air Marshal Sir John Higgins, K.C.B., a member of the Air Council, will lay a wreath on the R.A.F. War Memorial at Whitehall Stairs, Victoria Embankment, on behalf of the Royal Air Force and of the Executive Committee of the Royal Air Force Memorial Fund in memory of the Fallen of all ranks in the Great War, 1914-18. The ceremony will be of a very brief description, lasting only a few minutes, and no formal invitations are being issued, but the committee hope that all relatives of the Fallen, and friends, will attend this brief ceremony, which takes place at 12.30 p.m. Particular attention is drawn to the fact that the ceremony takes place

The figures for 1929-30 include a sum of £26,250 as subsidy for the operation of internal air services (six months' subsidy for the Karachi-Delhi extension of the London-India Air Mail service).

The figures for 1928-29 and 1929-30 together include a sum of £24,127 representing the assistance given by the Government of India to four light aeroplane clubs in India. This assistance is in the form of the supply to each club of two D.H. Moth aeroplanes and a spare engine, an annual maintenance grant of £1,500, a grant of £675 towards the provision of a hangar, and a bonus of Rs. 150 (approximately £11) per pilot for a limited number of pilots trained by the clubs.

The clubs are under the control and supervision of the Aero Club of India and Burma, which, in return for the services it renders in this connection, has received from Government grants of £2,250 in each of the two financial years 1928-29 and 1929-30.

A scheme for training Indians in civil aviation by means of Government scholarships in this country, estimated to cost £15,900 over a period of seven years, is also in operation.

The total estimated expenditure of the Government of India on civil aviation during the four years 1929-30 to 1932-33 (subject to the approval of the Legislative Assembly) is £1,125,000 (including meteorological and wireless facilities).

Of this sum, £375,000 represents the estimated cost of subsidies for the operation of trans-India air services.

### Staff College, Andover

MR. MONTAGUE, in reply to Maj. Pole, said the numbers of Indian Army and Dominion officers who received training at the Royal Air Force Staff College are as follow for the years 1926, 1927, 1928 respectively: Indian Army, 1, 1, 1; Royal Canadian Air Force, 2, 2, 2; Royal Australian Air Force, 2, 2, 2; South African Air Force (1928), 1.

No charge is made against the Government of India in respect of Indian Army officers trained at the Royal Air Force Staff College in view of the provision by that Government of reciprocal free training at the Staff College, Quetta. Payment is made by His Majesty's Governments in Canada and in Australia at the rate of £400 a year in respect of each officer under training. The actual receipts during the period covered by the three financial years beginning on April 1, 1926, and ending March 31, 1929, were as follows: Australia, £2,350; Canada, £1,358; South Africa, £496. These amounts do not necessarily relate to training within the period in question.

this year (and in subsequent years, unless otherwise altered), on the Sunday previous to Armistice Day, and will not, as heretofore, be held immediately after the ceremony at the Cenotaph, Whitehall.

### A Genet Avian Success

THE 80-h.p. Genet-engined Avian, piloted by Gordon Steeves, won the Montreal Air Derby, a race open to all comers, which was flown at Montreal on October 5. The engine was a perfectly standard production built and tested at the Armstrong-Siddeley Works in Ottawa and fitted with the Townend ring. The Genet engine has thus won all three big open races in Canada.

## AIR POST STAMPS

By DOUGLAS ARMSTRONG

(Editor of "The Stamp Collector")

### South American Air Posts

EXTENSION of the Pan-American Airways system through Central America has given rise to new issues of air post stamps in Guatemala, Panama, and Nicaragua. The first named had adopted to air post uses her latest 10 c. express delivery stamp by the simple expedient of overprinting the words "Correo Aereo" in blue, and surcharging additional values 15 and 25 centavos, as required. Guatemala has similarly surcharged her old 15 pesos postage stamp with the inscription, "Correo Aereo Postal," and denominations 3, 5, 15 and 20 centavos. In Nicaragua, the contemporary 25 c. postage stamp was overprinted in red "Correo Aereo, 1929—P.A.A." upon the occasion of the inaugural flight of the Pan-American Airways service between Managua-Miami and New York on May 17 last.

### Latest "S.C.A.D.T.A." Issues

Two new series of semi-official air post stamps have appeared recently under the auspices of the enterprising Sociedad Colombo-Alemana de Transportes Aereos, the one for use in Colombia itself, and the other for Ecuador, whose air post service is maintained by the same company. The former series comprises some 14 values, showing an oval vignette of a hydroplane flying over a mountain range, with the initials SCADTA across the top, and "Sobretasa Aerea" at the foot, whilst the Ecuador set consists of nine stamps only, the lower values of which depict the headquarters of the air service, and the 5 and 10 Sucres a view of Mount Chimborazo in larger format.

To commemorate the inauguration of a commercial air service between that country and its neighbour, Colombia, Ecuador has also issued an official set of eight stamps in an engraved design of an aeroplane flying over the River Guayas with the Government palace in the background. Despite the inscription, "Servicio Aero," however, it appears that these stamps are available for all ordinary postal purposes, and are not air stamps pure and simple. Their values range from 2 centavos to 10 Sucres, and they exist also with the addition of the word "Oficial" for departmental correspondence.

### Carranza Memorial Stamps

A remarkable set of stamps, the first to be dedicated to the memory of an aviator, was issued in Mexico on July 13, being the anniversary of the tragic death of the distinguished Mexican airman, Capt. Emilio Carranza, who lost his life when his aeroplane was destroyed by lightning and fire on his return flight from New York to Mexico City. The main feature of the design by Snr. Francisco Gutierrez, is an aeroplane in flight over some snow-clad mountains, with a portrait of the late Emilio Carranza inset on the left. The inscription reads, "A La Memoria del Heroe," and the stamps are printed in two colours by the National Printing Works, to the extent of 100,000 sets of the six denominations, viz., 5 centavos olive-green and black, 10 centavos grey-black and carmine, 15 centavos violet and blue-green, 20 centavos brown and grey, 50 centavos red-brown and grey, and 1 peso grey and brown.

### New Air Stamps in Prospect

In view of the extraordinary growth of air-borne correspondence in that country, the post office department of the U.S.A. is said to be contemplating the extension of its present series of air post stamps to embrace eight or ten denominations, early in the coming year, with the possibility of \$10 as the highest value. . . . Denmark has in active preparation additional air post stamps of 50 ore grey and 1 krone brown, whilst a new set for Italy is authorised by a recent decree of the Council of Ministers. . . . The Republic of Panama has been provided with aero stamps of special design in denominations 15 centavos red, 20 c. blue and 25 c. green, which will be taken into service as soon as the present supply of provisionally overprinted "Express Delivery" stamps is exhausted. A permanent air post series is likewise due to make an early appearance in Nicaragua.

### Abyssinia's Aeroplane

To celebrate the acquisition of its first aeroplane, the Abyssinian Government recently caused 1,500 complete sets of current postage stamps to be overprinted with a crudely drawn device of an aeroplane surrounded by an inscription in Amharic characters, which, being translated, reads "16 August 1929—Ethiopian Government Aeroplane." So far as can be ascertained no air post service exists as yet in this old world African Empire, so it may be presumed that the issue was of a purely commemorative character.

## EXIDE PRE-OLYMPIA PRESS LUNCHEON

THE Exide Battery Press luncheon which annually heralds the advent of another Motor Show, was held at the Clarendon Restaurant, Hammersmith, recently.

Although held in connection with this show, batteries are now becoming so widely used in connection with aircraft that the chairman's remarks are of equal interest to those connected with the aircraft trade as to those in the motor-car trade, or for that matter the wireless trade or anywhere where batteries are used. The speech naturally had a large amount in it that was purely in connection with motor-cars, but the extracts that were particularly applied to batteries are reported here.

Mr. D. P. Dunne, director of the Chloride Electrical Storage Co., Ltd., the makers of Exide batteries, gave some hints on the care of batteries during the winter months.

During the winter one serious danger is from frost. 14° F. of frost freeze acid 1.100 sp. gr.; 27° F., freeze acid 1.150 sp. gr.; and 50° F., freeze acid 1.200 sp. gr. Above that density batteries are immune from freezing.

The moral is (1) Always keep the plates well covered with electrolyte during extreme cold. (2) Ensure thorough circulation and mixture of the water and acid by giving the battery a charge after every addition of water.

If the battery is put away for the winter, it should first be fully charged. It can then be kept in condition by giving it a charge, say every two months. Instead of the user taking that trouble himself he can send the battery, whatever its make, to an Exide agent who will look after it for him.

In selling Exide batteries his company used the slogan "Buy Exide—it's the best." And he ventured to suggest for the car industry "Buy the best—it's British." No doubt the industry could be confident of living up to such a claim.

Exide batteries, Mr. Dunne said, are sold in important quantities in most European countries, as well as in all other countries. Sales were initiated not by advertising but by invasion.

The Exide people are, of course, believers in advertising, as is evidenced by the papers every day. They have now started to invite attention by presenting to the public at numerous talking picture houses a 10 minutes' entertainment by Tommy Handley called "Miking a Talkie"—certainly an innovation.

Mr. Dunne welcomed the development of the British car abroad and said when and wherever it arrived it would find Exide already established and at its service, as Exide already is at the service of other cars in those countries.

## PUBLICATIONS RECEIVED

*Timetable and General Information.* June 1, 1929. Australian Aerial Services, Ltd., Melbourne Aerodrome, Dudley Street, Melbourne, Australia.

*The Air Pilot Monthly Supplement.* No. 55. June-August, 1929. H.M. Stationery Office, Kingsway, London, W.C.2. Price 6d., post free.

## AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

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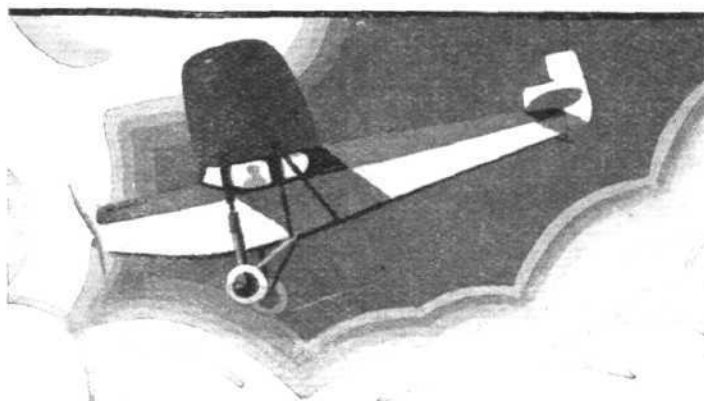
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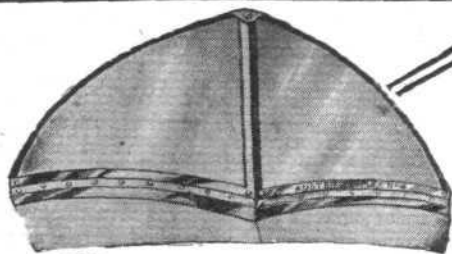
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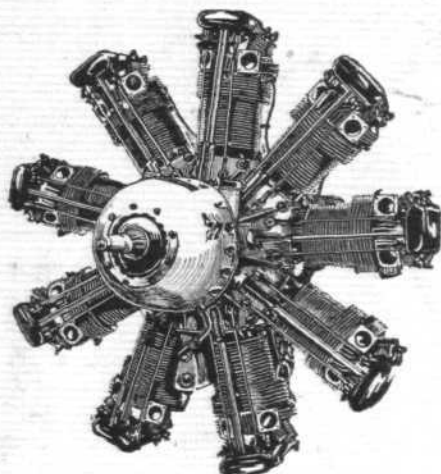
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